The Journal of the
American Medical Association

VOL. XXVIII. CHICAGO, ILL., MARCH 20, 1897. No. 12.

ADDRESS.

THE NECESSITY FOR INVESTIGATION AND OBSERVATION BY THE GENERAL PRACTITIONER.

An Address to the Berks County (Pa.) Medical Society, Feb. 11, 1896.

BY THOS. LEIDY RHOADS, M.D.

ASSISTANT DEMONSTRATOR OF PATHOLOGY; ASSISTANT IN THE SURGICAL CLINIC, JEFFERSON MEDICAL COLLEGE HOSPITAL.

Medicine is a science developed by a process of experimental induction, and by methods which lead to a complete, final evolution of undisputed facts. It is a rational science so far as the absolute conclusions, the uniform results, observable within its sphere, depend for their certainty upon comprehensive experience and complete analogy, and the reliable testimony of competent observers in the unalterable phenomena of nature. It is largely an empiric science inasmuch as the contingent methods generally accepted in the management of disease depend for their validity upon the cumulative evidence resulting from continued experimentation and observation. The institution of this method of investigation and observation formed the basis of its classification as a science.

For several centuries subsequent to its origin to a certain stage of its development, medicine, however, presents nothing that is of scientific value, and little that is of interest save from an historic standpoint, in that it is a record of the rank absurdities, the dreamy conjectures, the base impositions practiced in the ages of obscurity. Its materia medica was limited to decoctions of a few herbs common to the flora of the East; its armamentarium, a collection of agents that were used to work upon the superstitious beliefs of a credulous people—such as amulets, which were worn around the neck to chase away the ague, or an hexameter from the early Greek authors, which had power to assuage the agony of gout, or a verse from the lamentations, which was credited with the cardinal virtues of being a specific for joint affections. Mystical ceremonies, songs and incantations were used for the relief of pain, great stress was laid on the interpretation of dreams, and when death closed the scene the fatal event was attributed to want of confidence on the part of the patient. This constituted the medicine of the East in its early days, and little more can be said of surgery, which consisted principally of the extraction of the "bent and reeking spears from the breasts of the Trojan heroes," and a few crude operations with instruments of stone. No attempt was made to advancement, and thus medicine, for the dreamy blank of many centuries, was but a gaunt shadow of the infinite possibilities which the future was destined to disclose. It was little more than an instrument of deception in the hands of those instructed in the polite philosophy of the day.

What a paradox does this early history present! Medicine, created for the relief of suffering and the cure of disease, and which one would naturally expect to have been studied and developed with the greatest possible ardor and zeal in whatever age and land, made the means of artful chicanery! Medicine, noble in its purpose, infinite in its faculty, deserves a more exalted sphere. Knowledge, not superstitious tradition, should be its heritage. The spirit of investigation unchained should expand into a general movement of careful inquiry, and make the art a promulgator for public good.

On the advent of Hippocrates on the clinical stage, medicine assumed a new role. A desire for more accurate knowledge in the treatment of diseases stimulated an inquiry as to their causes and progress. It is the first evidence of the why and wherefore, the dawn of scientific advancement. It is the transition stage from the medical charlatan to the rational physician. Thus the way was led from the frauds of Priestcraft and a debasing quackery, to the significant methods based on observation and investigation, from the trammels of superstition and mental benightment to the daylight of reason, from the dictates of antiquated traditions to a sound, plausible, logical science. This investigating spirit became the epitome of medical progress. It was the nidus from which was developed a comprehensive and far-reaching science, a fountain spring whence flowed streams of energy destined to cleanse medicine of its fallacies, and to swell into a torrent of universal good. It gradually accomplished a revolution in the meaningless lethargic state in which medicine existed. A new life was infused into its followers. Once begun, its influence was incessant, and wherever medicine has since been practiced and studied and taught, this same spirit has been the dominant factor in its spread and development; and whether the seat of medical learning was in the stronghold of Grecian glory with its radiant philosophy, or was transferred from time to time from the votive tablets of the temples to the medicinæ of of the Seven Hills, "from beneath the shadow of the cross to the empire of the crescent, from the classic shores of Italy to the warlike followers of Mahomet, and the fiery descendents of Ishmael," from the splendors of Alexandria, with its library and museum, with Herophilus and Erasistratus, to Bagdad and Salamanca, and all of those institutions which grew and flourished beneath the iron scepter of the Mamelukes, from the ecclesiastics of Salernum to the realms of Charlemagne and the West and later to the new continent, it has been the essence, the eternal element of medical scientific advancement.

Medicine today is but the outcome of this progressive spirit. With the accumulated knowledge and increased facilities for research that have resulted from its many discoveries it has attained a status which has placed it on an equal footing with the

allied sciences. Its literature, the teachings of its medical schools, the products of its laboratories, give evidence of this. But the factors which have brought it to its present state of mature development dare not cease to be dominant. Today a greater enthusiasm exists in its future development than the past has ever witnessed. All the world over there are those who are striving with the keenest interest to solve problems that have baffled workers of the past. Much of this investigation is carried on in those laboratories of whose existence the public has no knowledge until some new Röntgen ray flashes its brilliant light throughout the land. Find out something new, aid in its development, be a contributor to science, is the order of the day. Even in our schools, where but a few years ago the essential features of medical teaching were the didactic course and the clinical arena, these have largely been supplemented by the laboratory, where the student is encouraged to do original work; and the marked advance of modern medicine can be traced to the early training received in these scientific workshops. Daily there are given to the world the products of the microscope, the culture tube, and the reagent. But there are certain lines of investigation, that can not be followed out in the laboratory, and it devolves upon the general practitioner, who has opportunities for observation more particularly in certain fields, to aid in the solution of these problems, to contribute to the increase of medical knowledge, and meet the obligations which he assumed on entering a profession whose demands for observation and investigation are so urgent at the present time.

It is unnecessary to recount how these investigations are to be carried out or to quote any examples illustrating the importance and value of observation and investigation. The history of the development of the knowledge of the circulation from Erasistratus, who thought the arteries contained air, to the researches of Williams, who demonstrated the migration of the leucocytes through the capillary walls, and the later application of this knowledge to the study of inflammation by Cohnheim, is still fresh in our minds. The investigations of Priestley proving the aeration of the blood and setting aside the false views of the ancients; Galen's early and crude study of the physiology of the nervous system, to the localizing of cerebral functions of the present day, which has paved the way for successful surgical treatment of brain lesions hitherto obscure and fatal, and among the later investigations of which no name is better known than that of Keen; Alcmæon's study of the human structure by comparative anatomy to the learned discourses of the late lamented Leidy; the weird theory set forth by Empedocles of Agrigentum to the confirmation of the illustrious Harvey's aphorism: *Omne vivum ex ovo;* the close study of the tissues and the creation of histology by the genius of Bichat, to the examination of the complex changes of the nuclear stroma in cell division—the karyokinesis of Schleicher; Koch's great discovery of the cause, which has revolutionized the treatment of tuberculous affections; the subject of callous production, of Senn, which has opened a broad field of conservative surgery, and has resulted in the saving of thousands of useful limbs; Lister's experiments on the practical use of the catgut ligature which have led to results in surgery that will ever make his name immortal. Kocher's recent announcement that myxedema follows extirpation of a goitre with the consequent cure of that disease, and the daily discovery of the bacteriologic causes of different diseases, with their consequent rational treatment—all these are but a few examples of the observations and investigations, the results of which have made the science of medicine what it is today. If the brilliant achievements of modern medicine and surgery are the direct result of these methods of investigation, future improvements must depend on the same sources of information. To aid then in enhancing the value of the science, to further its usefulness, should be the object of every physician, be he a worker in the laboratory, be he a a doctor of special organs, or be he the greatest of all specialists—the general practitioner. His idea should be at once to become a close observer and investigator, his motive to promote science. In this way only can he pay the debt of gratitude he owes to his profession and meet the demands of the present investigating era.

Were there a question as to the bearing and weight which the observations of the general practitioner will have upon the medicine of the future, it is but necessary to quote a few examples of the part he has taken in its evolution during the past: How the horrors of the battle-field, the agonies of maternity, the terrible sufferings of the clinical amphitheater are dispelled by the induction of ether anesthesia, which procedure originated in a small town in the backwoods of Georgia by an obscure village doctor, Crawford Long, who is now honored, in commemoration of his discovery, by a monument in the great metropolis of Europe. How the experiments of the elder Gross on intestinal anastamosis, during the early part of his professional career in a neighboring town, decided in large measure the future of intestinal surgery and reclaimed to life those who had been left to die from wounds of the viscera. How the most formidable operation of surgery, amputation at the hip joint, designated by Percival Pott as "horrid, dreadful and an unjustifiable procedure," was first successfully performed not with the skilled assistants and the best possible surroundings of the thoroughly equipped hospital clinic, nor on the battle-field, where an urgent ultimatum might have demanded it with little or no hope of recovery, but in the wild and remote regions of Kentucky at a time when there was no consulting advice to be had, and left to his own resources in the days before antisepsis and anesthesia, Walter Brashear, the man observant, the man of daring, successfully accomplished this feat of surgery, and, strange to say, after all the half a hundred different methods have since been tried and abandoned, that of Brashear is now used by leading surgeons as the best possible procedure. How Ephraim McDowell, an obscure practitioner in the early days of the Blue Grass State, with his life in jeopardy, brave and undaunted, first removed an ovarian tumor and became the pioneer of abdominal and pelvic surgery. How in a small Southern town, after years of careful study, battling with poverty and distress in an honorable struggle for a remunerative practice, Marion Sims devised the operation for the cure of vesico-vaginal fistula, which gave relief to a multitude of suffering motherhood afflicted with this hitherto incurable malady and gained for the originator perpetual fame. How the rapidity of operations was hastened and the danger to life lessened, by the use of immediate mechanical hemostasis, by the practical Hearn apply-

ing small spring clips to the cut ends of vessels, which contrivance led to the general use of the indispensable modern hemostatic forceps. These are a few illustrations of what has been accomplished by careful investigation and observation, even under the most trying circumstances, demonstrates conclusively the varied opportunities of the general practitioner in an inexhaustible and inviting field of labor and must be a stimulus to his pursuing a course of research that will ultimately reap similar results.

But in entering upon this work of research he dare not do so with the idea that a fortnight will disclose some wonderful hidden fact which ages have shielded from the searching eyes of investigators. Progress in medicine is slow. The grand march of medical science sweeps onward, upward through the solemn pathway of the ages, not with fickle, fitful movement, but slow, calm, majestic. Every appreciable advancement of the science marks a complete cycle of human thought whose exponent was a worker of antiquity. Every era has had its blind chimeras, its fanciful theories, its experimental investigations, its new discoveries, its ultimate absolute facts by which the science has been slowly evolved. Its elucidation must be gradual, and research must be followed out in a distinct line based on the investigations of previous years. Medical truths expounded at the present day are not the result of spontaneous thought. The same grand ideas have hovered over a vista of years. They warmed and fired the genius of medical philosophers from the early days of medicine, but the proving of them, the elaboration of the idea was left for the present investigating age. The field is inexhaustible and affords ample scope for all. Lord Bacon urged upon doctors the study of those diseases incurable, and it were well to profit by his advice.

There is practically no limitation to the various subjects which might be suggested as being especially adapted to the general practitioner's opportunity for observation and research at the present time. Hygiene or preventive medicine offers probably as large a scope as any and promises much for the future. The recognition of the fact that various diseases are preventable by instituting proper hygienic surroundings is a greater boon to humanity than all drugs discovered to date—a sweeping statement, indeed, yet nevertheless evident on careful reflection. The vast opportunity for extending the usefulness of this subject in the fruitful field offered by matters of drainage, the subject of ventilation, the disinfection of clothing, the disposal of sewage and the inspection of food and water supply is open more especially to the general practitioner. The effect of peculiar local causes upon the general health and constitutions of the inhabitants within the circumscribed limits of his practice, and their influences in exciting or modifying disease; the effect of hereditary tendencies and family diatheses in producing disease; the bearing which the mode of living of the inhabitants has upon sporadic cases or endemic diseases; the influence of neighborhood and houses in the propagation of certain diseases, as cancer, are but a few pertinent questions, the correct solution of which will have much weight on medicine of the future. Or the subject of dietetics might be presented, with the rôle it played in his treatment and to what extent and with what results it has superseded the general empiral administration of drugs. Or leading his investigations into another channel of the yet hidden secrets of the deep and comprehensive science, one might suggest the need of a safer and more agreeable anesthetic, a shorter cure for syphilis, a more extensive application of serum therapy, a hypnotic which will not form a habit, a specific for phthisis—these are but a few of the mysteries that sphinx-like stand out in bold relief, defiantly challenging to be solved.

Great as have been the discoveries of the last quarter century, who will venture to say what the next decade has in store for us. We dare not stand, awed though we be, on the brink of the twentieth century with a deaf ear to its demands. Our interest in medicine as a science would not tolerate such unconcerned inactivity. All the world over men are engaged—thoughtful, active, energetic men, in fathoming the great unknown, in recovering to us what has been lost for ages, and with this as a working basis, with exulting hearts constantly giving to the world their new discoveries, the fresh victories over disease, the taking away of the load of human suffering. They are commingling the elements which will determine the inevitable future of medicine. Let your zeal and enthusiasm swell the current of this general impulse for investigation into the mysterious workings of nature and add the results of your research to the knowledge that has been chastened and purified in the crucible of centuries, that is gradually attaining the perfection of a finished science. And when the investigating energy now spent in the laboratory of nature shall turn toward the ideal and rush into literature and the clinical arena, then there will arise authors whose works shall equal the lofty strains and discriminating judgment of a Da Costa, surgeons whose cunning hand shall have the skill of a Gross.

ORIGINAL ARTICLES.

CANCER OF THE STOMACH.

A Clinical Lecture delivered in Rush Medical College.

BY HENRY M. LYMAN, A.M., M.D.
PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE.
CHICAGO, ILL.

The two patients whom I bring before you this morning are both advanced in life; one of them is 57 and the other is 76 years of age. Both are emaciated and pale; both are cachectic and enfeebled. There are, however, certain differences between them which will become apparent on closer examination. The younger man is simply pale and thin, without special discoloration of the skin. The left foot is somewhat edematous and the glands above the clavicle, on the left side of the neck, are considerably enlarged. The expression of his countenance is careworn and the face is furrowed with deep lines. The tongue is pale, covered with a gray coating, and rather reduced in size. The thoracic viscera seem to be healthy, though the cardiac beats are frequent and feeble. The liver is small and the spleen is hardly distinguishable. Placing the patient on his back and palpating the abdomen it is easy to discover an abnormal degree of epigastric tenderness on pressure. The stomach is filled with gas and extends downward as far as the navel; it is considerably dilated and there is tympanitic resonance over a large part of the belly. The intestines are not correspondingly filled with gas. In the pyloric region a tumor, rather irregular in form and nearly the size of a fist, can be distinctly felt. It moves but little during respiratory efforts; it is sensitive to pressure, and percussion brings out over its

area a dull sound quite in contrast with the note that is returned from the cardiac portion of the stomach.

The patient, who has been a large and vigorous person in former years, tells us that he was leading an active life till one year ago. He had for many years been in the habit of taking whisky before each meal on account of indigestion. He gives a history of chronic gastritis which was perhaps caused, and was at any rate aggravated, by the alleged remedy.

Nearly twelve months ago he lost his appetite; began to lose weight and strength; complained of gaseous distention of the stomach; and about seven months ago began to vomit his food. It was often very acid and irritating to the fauces; it was accompanied by a copious discharge of gastric mucus, and lately by streaks of blood and a dark, granular looking substance, like coffee grounds. During the whole time the chronic uneasiness, with which he suffered for years, became intensified, so that he complains of deep-seated, gnawing, burning, boring sensations which are aggravated by taking food. For a considerable period of time there was no tumefaction of the stomach, but about four months ago the epigastric region became enlarged, and distinct evidence of a tumor was apparent at the pyloric end of the stomach.

The older patient also states that the greater portion of his life has been passed in the enjoyment of excellent health. He was a farm laborer, sober, industrious, married in early life, and always free from venereal disease, malarial cachexia and other maladies. After his sixty-fifth year he began to suffer during cold weather with various forms of neuralgia in different parts of the body and limbs. During one of the winters, five or six years ago, he frequently experienced attacks of gastralgia and enteralgia, which were usually relieved by a few doses of bismuth and magnesia, or by a hypodermic injection of morphin, when uncommonly severe. Two years ago he began to emaciate gradually and now you see that he is much reduced, having fallen in weight from 175 pounds to 123. I give you an opportunity to inspect the patient and you can observe the total loss of subcutaneous fat and the absence of elasticity in the skin, which only very slowly retracts when pinched into folds over the abdomen. Remark also the pallor and earthy color of the skin everywhere over the body and limbs. The thoracic viscera are healthy; the scanty urine is high colored and dense, but it contains neither albumin nor sugar; there is no distention of the stomach or intestines; the liver and spleen are not enlarged; there is some tenderness over the whole upper half of the abdomen; perhaps there is a slight increase of resistance to pressure upon the epigastrium just below the ensiform cartilage; but there is no defined tumor anywhere within the abdominal cavity. The symptoms so far are quite negative and are usually explained as the result of *senile marasmus*. But during his residence for two months in the hospital he has exhibited certain phenomena of a suspicious character. Occasionally he has vomited and the contents of the stomach have been acid, owing to the presence of lactic acid. Free hydrochloric acid has been invariably absent. Giving him a solution of potassium iodid to drink, it was an hour before the salt could be detected in the saliva, though as you are aware, in a healthy subject it should pass from the stomach through the salivary glands into the mouth in less than twenty minutes. Lately the inguinal glands and those on the left side of the neck have begun to enlarge. In view of all these symptoms, though we can discover no palpable tumor, and though the patient does not exhibit any very acute or rapidly developing evidence of failing health, I am inclined to think that he too is a victim of gastric carcinoma.[1]

Let us now consider the general symptoms of cancer in the stomach. It is worthy of note that the disease has a two-fold effect upon the health, since in addition to the cachexia that is developed as the neoplasm grows, the nutrition of the body is hindered by the local derangement of digestion that is caused by the presence of the tumor in the wall of the stomach. In this particular the effect is largely conditioned by the situation of the growth; when the pylorus is invaded, there will be obstruction to the exit of food from the stomach, and the viscus will undergo dilatation; if the esophageal portion of the organ be invaded there will be difficulty about the entrance of food from the esophagus, with consequent dilatation of that tube and shrinkage of the stomach itself. When the body of the organ itself is the seat of carcinoma, the consequent phenomena will depend considerably upon the destruction and perversion of function of the peptic glands in the mucosa. In many cases, of which the elder patient before you is a type, the symptoms are for the most part connected with chronic indigestion and progressive cachexia. No evidence of a neoplasm can be localized, and the cancer develops in an obscure and latent manner, to be discovered only after death. Consequently, the discovery of a tumor connected with the gastric wall affords one of the most reliable symptoms of the disease. But when such a tumor is in its earlier stage of growth, if it be situated at the pyloric end of the stomach, or upon its lesser curvature, it will be covered by the liver until it has enlarged to such a degree that the stomach is dragged downward by its weight. Then it may become possible to feel and to percuss the growth itself. Sometimes a change of position is necessary to affect this demonstration, the tumor remaining concealed behind the liver so long as the patient lies on his back, but falling downward and forward within reach whenever he turns upon his left side or gets upon his hands and knees.

When a tumor is demonstrable, its apparent size will, of coure, depend largely upon its age and its situation. Usually placed near the extremity of the ensiform cartilage, it may finally occupy the entire epigastrium, reaching even so far as the left hypochondrium or the umbilical region. Such extensive growths are more or less irregular in their shape, a fact that can be easily demonstrated after emaciation has occurred. Unlike tumors of the liver and spleen, which are so extensively displaced by the excursions of the diaphragm during respiration, these gastric tumors are but little influenced by the movements of respiration. They are much more affected by filling the stomach with air, water or food, which causes the upper portion of the organ to rise and to carry with it the new growth, until it may be entirely concealed behind the liver, whence it once more emerges after the stomach is emptied again.

When the tumor is accessible to palpation, its outline can often be clearly defined. But in many instances this is impossible, and the explorer must remain content with a sensation of diffuse resistance

[1] The patient died three weeks later and the autopsy discovered the existence of a small scirrhus cancer in the posterior wall of the stomach, just far enough from the pylorus to avoid obstruction of that orifice.

to pressure over the epigastrium. Inflation of the stomach with air often aids in displacing the mass so that it can be more easily reached. Sometimes it will rest upon the abdominal aorta, and can be felt to rise and fall with the pulsations of the vessel. But these displacements are simply rhythmical movements in a direction perpendicular to the artery, instead of being universally expansive like the pulsating dilatations of an aneurysm.

Percussion over a tumor connected with the stomach gives out a dull sound in which there is a somewhat tympanitic resonance, though not so clear and full as when the healthy organ is distended with air. Auscultation furnishes very little help in the diagnosis, unless performed with the help of the phonendoscope. With this instrument a skilled observer can often outline the tumor with great precision.

In cases where no tumor can be discovered, it is necessary to rely upon general symptoms for a diagnosis. The books advise persistent scrutiny of vomited matter and of the feces, in hopes that a detailed fragment of a carcinomatous mass may be thus captured for microscopic examination. But success has very rarely rewarded such patience. Better results are obtained by observation of the blood that in one form or another is usually vomited during the course of the disease. Unlike the copious hemorrhage that occurs in ulcer of the stomach the blood that is present in the vomited matter is usually scanty in amount, appearing in streaks among the mucus that is discharged from the cavity of the organ; or, when it has remained for some time in contact with the gastric juice, transformed into a substance that looks like coffee grounds, due to the conversion of the oxyhematin of the red corpuscles into hematin. Similar sediments are often apparent in the vomit in gastric ulcer, so that this symptom alone is not diagnostic. The stools may also contain blood, just as they sometimes do in ulceration of the stomach or small intestine.

Vomiting is a frequent event, especially in the majority of cancerous growths that encroach upon the pylorus. Sometimes the patient experiences sudden relief and permanent cessation of vomiting when the obstructive neoplasm breaks down and leaves the pyloric opening clear. In many instances, however, the appearance of relief is due either to a degenerative paralysis of the muscular coat of the stomach, or to the exhaustion that heralds the approach of death. Vomiting is sometimes replaced by hiccough or by eructation of offensive gases. This is not diagnostic since it may occur in other disorders of digestion.

The absence of free hydrochloric acid from the gastric juice is a symptom of great importance, though not by itself decisive. Cancer that has supervened upon a round ulcer of the stomach may be accompanied by an actual increase of free hydrochloric acid if the gastric glands have not undergone atrophy. Such degeneration of the glandular apparatus is the proximate cause of a deficiency of acid; the remote causes may be various. But, when free hydrochloric acid is absent from the stomach of an elderly, cachectic and emaciated patient, the probabilities are all in favor of the existence of a carcinoma as the fundamental cause. In all such cases there is also diminution of the pepsin and other ferments that are present in normal gastric juice.

Another interesting symptom of cancer of the stomach is the retardation of absorption through the mucous membrane of the viscus. When iodid of potassium is swallowed by a healthy person it can be detected in the saliva within ten or fifteen minutes; but when cancer exists, there will be no trace of the iodid until the lapse of an hour or an hour and a half.

When a tumor can be felt through the abdominal wall, it is sensitive to pressure. Besides the pain that may be thus excited, there is a general diffusion of dull, aching, burning, boring pain all over the region of the stomach. These pains are more widely felt and are less intense than the corresponding pain in gastric ulcer. Pain is usually increased after eating, and is often worse in the night than during the day. It sometimes is felt, like other pains of gastric origin, in the thoracic nerves, in the shoulders, or even in the arms. Sometimes, symptoms of an asthmatic character are thus excited.

The tongue is usually coated with a thin white, gray, or yellowish brown coat. If there be frequent vomiting of acid and acid liquids, the tongue becomes red, smooth, shining and dry, like the "beefsteak tongue" sometimes seen in advanced cases of typhoid fever. In the "latent cancer" of old people this condition of the tongue is often one of the most conspicuous symptoms.

During the earlier stages of the disease the bowels are constipated, but, when the large intestine has become inflamed by reason of the passage of ill-digested food and acrid products of ulceration from the stomach, there may be diarrhea or dysentery.

The urine is usually scanty, high-colored, and sometimes loaded with indican, which may be demonstrated by introducing equal parts of urine and pure hydrochloric acid into a test-tube, and then adding two or three drops of a saturated solution of calcium chlorid. When indican is present, a deep blue or reddish blue color at once develops in the tube.

A symptom of great value when it is present is sometimes afforded by an enlargement of the lymph-glands in the neck, above the left clavicle, in the immediate vicinity of the orifice of the thoracic duct. In like manner, during the last days of the disease one or more of the extremities may become swollen by interference with the lymphatic circulation, or through the occurrence of marantic thrombosis in an important vein. Serous effusion into the various cavities of the body may also precede death.

Appetite usually fails, unless the position of the neoplasm obstructs the entrance of food into the stomach; hunger is then a prominent symptom. Thirst is frequently experienced. Insomnia is a common event. Emaciation and exhaustion are progressive; the skin often assumes a dirty color, and becomes thin, dry and furfuraceous. Sometimes there is dreadful itching all over the body, especially in the latent cancer of old people. Occasionally, the patient exhibits all the phenomena of progressive pernicious anemia, and only after death is the fact of a local cancerous growth made apparent.

Continuous loss of flesh is the rule in these cases, but occasionally we see patients who die before the subcutaneous fat has been all consumed. Sometimes when there is pyloric obstruction and dilatation of the stomach, a course of careful washing out of its cavity, and attention to the diet, will result in a temporary increase of weight.

The temperature of the body usually remains normal or abnormal; but in certain cases there are intermittent paroxysms of fever occasioned by septic poison-

ing from the absorption of products of disintegration in the tumor. This may be considered as one of the rather numerous complications to which the disease is liable. Among other complications may be named dilatation of the stomach as a consequence of pyloric obstruction. Sometimes such obstruction is relieved by a process of spontaneous sloughing, and the opposite condition, pyloric incontinence, is established. When the cardiac portion of the stomach is involved, the esophagus may be invaded, and the original disease becomes complicated with the symptoms of esophageal stenosis. A gastric sound can be introduced only with difficulty, and there is a change in the auscultatory sounds that should be heard during the act of swallowing liquids, when the stethoscope is placed to the left of the ensiform process; there is either no audible gurgle, or it is replaced by a tardy trickle.

Secondary growth of cancer is other organs is a not uncommon complication of the disease. Sometimes the liver is so extensively invaded by the secondary process that the primary gastric neoplasm is quite overshadowed during the life of the patient.

The duration of the disease is not easily determined because of the obscurity of the early symptoms. The course of the disease is more rapid the younger the patient is. Sometimes it proves fatal, apparently after a few weeks only; and it may be prolonged for two or three years. Ordinarily it continues for about one year. Death may occur suddenly, as a consequence of profuse hemorrhage; or perforation of the wall of the stomach, followed by peritonitis; or it may occur during coma, with collapse that is suggestive of auto-intoxication. Sometimes death results from slow starvation due to obstruction, either pyloric or esophageal. Frequently the patient gradually wastes to a skeleton, and slowly sinks into a condition of apathy that terminates in death. Albuminuria, edema of the extremities and venous thrombosis are not uncommon incidents in this mode of decease. When there is esophageal obstruction regurgitated food may find its way into the trachea, producing fatal pneumonia, abscess or gangrene of the lungs.

Despite the gravity of the symptoms it is not always easy to diagnosticate the existence of gastric carcinoma. In the absence of a tumor there may be only the symptoms of progressive pernicious anemia; or of progressive emaciation and cachexia. But when an old person without apparent cause, suffers loss of appetite, indigestion, insomnia, persistent itching of the skin, cachexia and frightful emaciation, the probability of latent cancer is very great. The gastric juice should be examined, with regard to the presence or absence of free hydrochloric acid. Some have emphasized the presence of lactic acid in excess, but this is not always the case in gastric cancer. The absence of pepsin in the urine has also been announced as an important symptom in doubtful cases. Slow absorption of potassium iodid is another valuable indication of the disease. Reduction of hemoglobin to less than 60 per cent. is another suspicious circumstance. But none of these symptoms are diagnostic; it is the concurrence of several indications that gives a high degree of probability to the diagnosis in these obscure cases.

When a tumor is present it should be, if thus accessible, explored with a sound. Sometimes it can be reached through the esophagus by the aid of a sound of extra length. From tumors of the liver or spleen it may be differentiated by the almost total absence of movement during respiration. But it may be considerably displaced if the stomach be distended with air, water or food.

Sometimes the tumor can not be accurately defined, but gives only a generalized sense of increased resistence to pressure over the epigastrium. In such cases, it is allowable to entertain the possibility of a tumor consisting of cicatricial tissue after previous ulceration of the stomach, or of a fibroid hypertrophy of the gastric walls or of the presence of foreign bodies, or of other tumors outside of the stomach. In the last case it is necessary to discuss the differential diagnosis of all possible abdominal tumors, such as sub-phrenic abscesses, circumscribed peritonitis, enlarged mesenteric glands, intestinal tumors, coprostasis, mesenteric cancer, tumors of the pancreas, uterus and ovaries, together with aortic and other intra-abdominal aneurysms. The field for contemplation that is thus opened to the diagnostician is one of the widest in medicine.

About the prognosis in cancer of the stomach there is very little to be said, and that little is absolutely unfavorable. When the disease is sufficiently advanced to render the diagnosis reasonably certain, it is only a matter of a few months before the inevitably fatal termination. Consequently, there is nothing that is known regarding curative treatment. During the early stage the symptoms are usually vague, and merely characteristic of indigestion, the treatment then is that which is appropriate for gastric catarrh. During the later stages, when symptoms of pyloric obstruction are present, the question of resection of the tumor should be raised. When a notable tumor, that is circumscribed and not adherent to other parts, can be demonstrated, it may be very properly removed by a surgical operation. In cases of doubt, an exploratory incision may be needed in order to decide whether an operation upon the pyloric tumor can be safely performed. In many instances it will be found that what seemed, before the incision through the abdominal wall, to be a small and freely movable growth is really extensive and widely adherent. When such a state of disease exists, relief may be procured by making an opening between the cavity of the stomach and the small intestine below the tumor, gastro-enterostomy. In the majority of cases this will be the preferable operation, because less dangerous to the life of the patient. When there is esophageal obstruction the operation of gastrotomy may be resorted to. By these methods nutrition is once more established and life may be prolonged.

But, in the majority of cases, the fatal day is only delayed for a brief period. Death comes at last in every instance.

When pyloric stenosis does not exist, and when a tumor is either late in its development or can not be demonstrated, the treatment should have for its object the relief of suffering, and the improvement of nutrition. In the earlier stages of the disease much benefit may be derived from the use of sodium iodid in doses of ten or fifteen grains three times a day, with five drops of Fowler's solution of arsenic after each meal. So long as the mucous membrane of the stomach remains without ulceration, digestion may be aided by the administration of diluted hydrochloric acid, ten drops in half a glass of warm water after meals. But in the later stages of the disease, when acids are liable to cause pain, it is better to give the

various peptonized foods which are prepared by the manufacturing chemists. Being already partially digested they are more easily disposed of by the enfeebled stomach. For the same reason kumys and extracts of meat will be found useful. As a stimulant of the appetite and a preventive of nausea, the various preparations of condurango have considerable reputation, though the extravagant expectations that were aroused on the first employment of the drug have not been justified. It is, however, a valuable gastric tonic, which may be given before meals in doses of twenty or thirty drops of the fluid extract, well diluted with water. If the stomach be dilated by reason of pyloric stenosis, much relief will be obtained through daily washing out of the stomach with the gastric syphon-tube. This will prevent the accumulation of decomposing substances which liberate irritating gases and liquids that excite pain, and when absorbed into the general circulation, act as toxins upon the tissues of the body. Vomiting will be often relieved by this operation, which in any case should precede the administration of internal remedies. If the distressing nausea be not arrested by simple lavage, trial should be made of ice pellets, creosote, cocain, tincture of iodin, and the milder narcotics. If they fail to afford relief, we should give one-eighth of a grain of morphin with a drop of diluted hydrocyanic acid every hour till the pupils begin to contract. In severer cases, when pain is a prominent symptom, morphin and atropin should be freely given with the hypodermic syringe. In the later stages of the disease this often remains the only means of relief; and the comfort thus procured leads the unfortune patient to exclaim, with the celebrated Dr. Bartlett, that "opium is God's greatest gift to man!"

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

Read before the Detroit Academy of Medicine. December 9, 1896.

BY CHAS. D. AARON, M.D.

INSTRUCTOR IN MATERIA MEDICA, DETROIT COLLEGE OF MEDICINE. DETROIT, MICH.

If our treatment of cancer of the stomach shows poor results, it is due to the fact that the medical practitioner usually does not make his diagnosis early enough, and when the surgeon is called, he finds a disseminated mass instead of a circumscribed tumor to be extirpated. When we take into consideration that .5 to 2.5 per cent. of all deaths and 35 to 45 per cent. of all cancers are of the stomach, it is time that more attention be paid to an early diagnosis. It is because the average physician neglects a more detailed examination and resorts to bismuth and pepsin, that cancer of the stomach has been allowed to attain such development as makes an operation practically useless. What, years ago, Brinton said of cancer of the stomach, is still true today. He said, it is obscure in its symptoms, frequent in recurrence and fatal in its course. In spite of the progress made in the diagnosis of stomach diseases, the therapy of cancer of the stomach remains the same, namely, early extirpation. But when a large tumor can already be felt in the epigastrium, it is usually too late to operate, since then the surrounding tissues are involved by metastasis.

It is the intention of this paper to show how beneficial it would be, in the majority of instances, if a diagnosis were made before a tumor is palpable. We are told of recoveries after operations on cancerous patients, when the tumor was already palpable, but these cases are extremely rare. It is possible that the diagnosis was made early by one who was able to locate the new formation. But can we make a diagnosis on the basis of the general course of the diseaes, even if the presence of a tumor has not been established? Boas tells us that strong Uffelmann's reaction after a test breakfast, points out the probability of cancer of the stomach. Heretofore it was believed that when we had a case of chronic gastritis, with absence of hydrochloric acid, either lactic, butyric or acetic acid fermentation takes place. This has been proven not to be true. While we were formerly able to demonstrate that lactic acid is present in cancer of the stomach, this circumstance was not given sufficient weight until Boas drew our attention more particularly to it. Boas says that in cancer of the stomach Uffelmann's test gives us a greenish-yellow reaction, due to the presence of lactic acid, and that the little quantity of lactic acid which results from other causes, does not react in the same way. Ewald tells us that the advantage of Uffelmann's test is its extreme sensibility to lactic acid found in carcinomatous patients, but in the differential diagnosis the abundance of lactic acid should always be taken into consideration.

To get an intense lactic acid reaction, it is necessary that there is a stagnation of the stomach contents and that hydrochloric acid is absent. If only one of these conditions is fulfilled, as in chronic gastritis or dilatation, we can not get this reaction. I concede that in rare instances we have a formation of small quantities of lactic acid, but it occurs in small quantity only and it does not give the characteristic reaction, as lactic acid does in carcinoma of the stomach. Whether we have a specific lactic acid or not in cancer of the stomach, I will not discuss here.

When the stomach contents show the absence of hydrochloric acid and the persistent presence of lactic acid, we are able to make a diagnosis by differentiation. There can be a choice of but one of three diseases, nervous anacidity, chronic gastritis or malignant new formation. We can always exclude nervous anacidity and chronic gastritis, on account of the persistent presence of lactic acid, which always indicates carcinoma of the stomach. It is necessary to look for a stagnation of the contents of the stomach. The patient may have vomited food which had been taken a day or two before, or we can estimate the amount of the stagnation by washing out the stomach. In chronic gastritis we never have a stagnation, there is usually a prompt forwarding of food into the intestine. In fact, in many cases of chronic gastritis, the motor function of the stomach is heightened, as I have often seen.

It is unnecessary to wait for the cachexia, edema of the joints, enlargement of the glands, fissured tongue, emaciation, obstinate coffee-ground vomit, insomnia, vertigo and the palpation of a tumor to make a diagnosis of cancer of the stomach. No surgeon can give us a good result after these symptoms have already appeared. It must not be forgotten that, in a number of cases, the liver prevents us from palpating a growth of the pylorus until it is quite large. It is frequently found that the fenestra of the stomach tube is filled with small particles of clotted blood. Professor Ewald regards this as an indication of carcinoma, even though a tumor is not yet palpable. These particles should always be examined micro-

scopically, and if cancer cells are present, our diagnosis is verified, but if absent, we can only suspect it. A diagnosis of cancer of the stomach can usually be made several months before the tumor becomes palpable.

The following points may be looked for: 1, a stubborn case of stomach disorder appears, in a person (say between 35 and 60) who was formerly in good health; 2, loss of weight and flesh; 3, vomiting occurs often; 4, a test breakfast proves that free hydrochloric acid is absent; 5, there is a stagnation of the stomach contents; 6, lactic acid is shown to be present in abundance; 7, a microscopic examination shows that long thread bacilli are present. Cases are repeatedly reported abroad in which, after a diagnosis of cancer made by the above symptoms, exsection of the pylorus was performed and the cure of the patient achieved.

It seems to me we are now able to make an early diagnosis of cancer of the stomach, before metastasis has taken place, by means of a thorough examination after a test breakfast.

I do not mean to imply that by means of the seven data I have enumerated, every cancer of the stomach can be easily recognized, but they indicate a considerable step forward in an early diagnosis, and thus open up for the surgeon opportunities which were closed to him till now.

For the examination for the presence of lactic acid, Uffelmann says that diluted solutions of neutral ferric chlorid turn canary yellow in presence of lactic acid. Should this reaction give no positive results, I would advise Kelling's modification. This consists in diluting the filtrate of the gastric contents from the tenth to the twentieth fold; to this one or two drops of a 5 per cent. ferric chlorid solution is added, and a greenish-yellow discoloration takes place. This proves the presence of lactic acid. In order to avoid the obscuration of this greenish color through the rhodan, which originates from the saliva, Kelling adds a few drops of a sublimate solution. The procedure as recommended by Strauss can also be applied. This consists in filling a burette, graduated at 5 and 25 c.c. respectively. We fill the burette up to 5 c.c. with the stomach filtrate, and add sulphuric ether up to the mark 25; this is well shaken, and through a stop-cock at the bottom, the burette is emptied to 5 c.c. and filled to 25 c.c. again with distilled water. To this are added two drops of a ferric chlorid solution (one to nine) and the whole is shaken. According to Strauss, if lactic acid up to 1 per cent is present, an intense green appears, and if the percentage is lower a pale green is noticeable.

For exact scientific data, the method of Boas is valuable. It aims at a decomposition of the lactic acid into acetaldehyde and formic acid, by adding some oxidizing agent and by the aid of heat.

$$\underset{\text{Lactic acid.}}{CH_3CH(OH)COOH} = \underset{\text{Acetaldehyde.}}{CH_3CHO} + \underset{\text{Formic acid.}}{CHOOH}.$$

The presence of lactic acid is proven by the existence of the aldehyde through the formation of iodoform, with an alkalin iodin solution or through the formation of mercuric aldehyde with Nessler's reagent.

In former years the results attained by exsection of the pylorus were far from satisfactory. This was due to the fact that it had been resorted to too late in the stage of the disease, when complications had arisen and the patient had been reduced in vitality, and metastasis had taken place. Later statistics, however, are more favorable, and show what can be accomplished when a diagnosis has been made early. Haberkant performed 207 exsections of the pylorus, of which 114 were due to carcinoma; he had 93 recoveries and a mortality from pylorectomy in the carcinoma cases of 55.8 per cent. Hahn in 1891 had a mortality of 77 to 41 per cent. Zeller in 1893 a mortality of 61 to 34 per cent. But the most gratifying results Mikulicz reports in 1895. Out of eighteen pylorus exsections he lost only five cases. These statistics are in themselves a proof of the possibilities of success of pylorectomy, on condition of an early diagnosis. I can not warn too earnestly against the habit which physicians have, of waiting for the appearance of a palpable tumor, before they advise surgical procedure. Czerny and Rindfleish have as far back as 1892 emphatically declared that, in the majority of cases when we make a diagnosis of cancer of the pylorus by the palpation of a tumor, no radical operation should be made.

32 Adams Avenue West.

THE FEVERS OF SOUTHWEST TEXAS.

A THIRD FEVER OF THE SOUTH.

BY R. S. WOODSON, M.D.

UNITED STATES ARMY, JACKSON BARRACKS, LA.

The differentiation of the fevers of the South has not kept pace with modern medical progress. The diagnostic dragnets, typhoid fever and malaria, have so monopolized the nomenclature of such diseases that the suggestion of a third fever is received with incredulity on the part of the profession. Many continued forms of disease, of doubtful etiology, have been reported as typhoid fever. Some local practitioners have disregarded differentiation and have adopted such terms as slow fever, Rio Grande fever, Texas fever, etc. Such looseness of diagnosis can not but be a bar to the progress of medicine.

It is conceded that the variability of the personal thermic coefficient, the different powers of resistance against the ravages of disease and the difference of intensity and virulence of bacterial infection will modify the classical course of any fever.

That saprophytic microörganisms may under certain conditions develop into pathogenic bacteria, capable of inducing infectious disease, the type of which, being dependent upon the environment of the germ, the stage of its evolution and the extent of infection may also be accepted.

The conversion, in the intestinal tract, of the colon bacillus into the typhoid bacillus, which it so nearly resembles and from which it is with such difficulty differentiated, its absorption through infection atria, may be regarded as a possibility. Indeed, it has been advocated that the colon bacillus itself may become the specific causative agent in the production of disease, and certainly no one will deny that the absorption of various ptomains, developed in the intestinal tract from the decomposing contents, may be productive of continued fever.

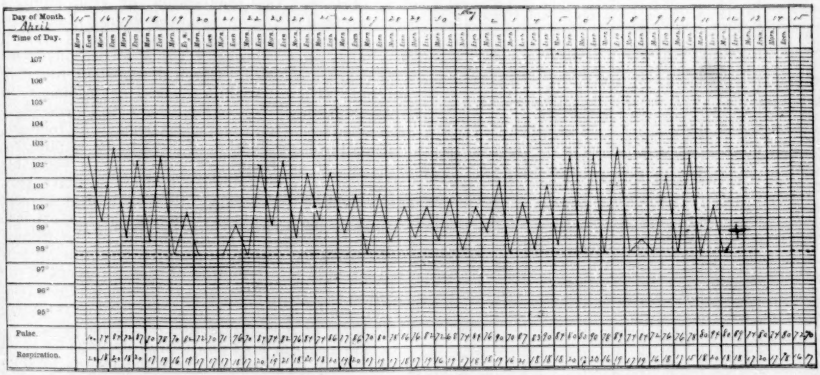
While thus granting that mild atypical and abortive types of disease may occur, the conviction has been forced upon the writer that there exists a third fever of the South, not due to specific infection or to a hidden latent lesion; and though variously denominated by different observers, yet, from their consensus of opinion as to its symptomatology, I am led to believe that I am discussing the Texas fever (not the south-

ern cattle fever) of Assistant Surgeon McCullough, the intestinal toxemia of Surgeon Davis and the atypical typhoid of Surgeon Maus. (See report of Surgeon General, 1893–96.)

Two cases, with thermographs, illustrative of the types of the disease are presented.

Case 1.—Trumpeter Barton, Troop C, 5th Cavalry, Fort McIntosh, Texas, a man of great muscular development, gouty diathesis, exercised violently while playing the opening game of base ball, Sunday, April 12, from 1 to 4 P. M., weather intensely hot. Was much exhausted after the game. On the following day he suffered from general muscular soreness and fever. Was admitted to hospital April 15, 1896. Temperature 103 degrees F., general myalgia, headache, skin dry, constipation, partial suppression of urine, 420 c.c. in twenty-four hours, color reddish brown, strongly acid, sp. gr. 1.030, loaded with uric acid, calcium oxalate, and phosphatic deposits, pulse slow and strong. The disease dragged on with irregular thermic movement, for two months, during the course of which the subjective sensations of the patient were excellent; no emaciation occurred beyond what a light diet and confinement to bed would naturally produce. Urine continued scanty, only 450 c.c. excreted as late as May 12.

Case 2.—Blacksmith Graeff, Troop C, 5th Cavalry, a man of powerful physique and likewise of gouty diathesis, played base ball Sunday, April 26, 1896, for the first time in four years; weather intensely hot; was much exhausted after game. He was admitted to hospital April 29, 1896. Temperature 104 degrees F., general myalgia, skin dry, bowels constipated, pulse slow and tense, headache, partial suppression of urine, 600 c.c. in twenty-four hours, sp. gr. 1.028, loaded with calcium oxalate and phosphates. Temperature steadily declined under treatment, with improvement of subjective symptoms, until discharged, May 9, 1896.



CASE 1.

Numerous blood examinations were made in these cases with negative results. The quantitative estimation of urea was made but once, upon admission, in each case, and was found to be normal.

The treatment consisted of alkaline diuretics, baths and diaphoretics. Case 2 responded quickly to treatment, urinary secretion normal on the eighth day, while Case 1 remained obstinate to all treatment, urinary secretion remaining below 450 c.c., with dry skin and torpid bowels for four weeks, with a continuous abnormal excretion of uric acid.

The symptomatology and previous history of the two cases were identical, and although they differ greatly in their clinical course, they are believed to have been different types of the same affection.

That a uric-acidemia existed in both cases is reasoned, *a priori*, from their gouty diatheses, large consumption of meat and beer, with a consequent retention and deposition of uric acid in the tissues during the cold months of comparative sedentation, and its fulmination into the blood during excessive exercise upon the advent of intensely hot weather; *a posteriori*, from the partial suppression of urine, increased excretion of uric acid, slow, high tension pulse, headache and diminished metabolism occurring during the disease.

In addition to the fever in question the following relevant facts were observed: 1, that children in this region (Southwest Texas), are to a great extent exempt from this disease; 2, that officers and women suffer from lithemia and neurasthenia; 3, that robust unacclimated cavalrymen were the principal sufferers from fever.

In searching for an explanation of these observations, my attention was directed to an article by Prof. John Elliott, in the *New Orleans Medical and Surgical Journal*, 1878, entitled "Combustion and Assimilation,"[1] and to Alexander Haig's monograph, "Uric Acid as a Factor in the Causation of Disease." While the following is my own exposition of these subjects, and especially their application to the above phenomena, yet the credit of originality is due these authorities.

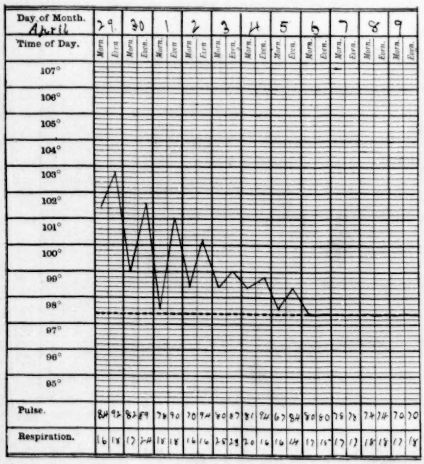
That the disease is not typhoid fever, I can do no better than refer the reader to Assistant Surgeon McCullough's able article contained in the Surgeon-General's Report, 1894. That it is not malarial has been proven by the invariable absence from the blood of plasmodia. From its non-specificity and absence of any pathologic lesion, I am convinced that it is a pure neurosis, a fever of exhaustion, involving the thermogenetic, thermo-taxic, thermo-lytic, portions of the sympathetic nervous system, and that it can be explained upon a purely physiologic basis as follows:

The manner of production of animal heat, its maintenance, distribution, control and dissipation, its

[1] The essence of this excellent and most convincing article is that the energy liberated during katabolic combustion, is utilized in lifting the food pabulum into the protoplasmic molecule. That any arrest in this process by reason of trophic inhibition, from whatever cause, is accompanied by the evolution of a lower grade of energy in the form of heat. He, therefore, briefly defines fever as an increased heat production, resulting from deficient tissue formation.

potentiality as forming the physical basis to the phenomena of life, are questions of importance in this discussion—of especial importance is the nervous system in controlling this production, distribution and dissipation. Those portions of the nervous system engaged in this functioning are the vaso-motor and trophic, the first having to do with the distribution and dissipation of heat (thermo-lysis), the second with its production (thermo-genesis).

The process of heat production is known to be an oxidation, in which, under the domination of the *trophic nervous system*, the potential energy stored up in the protoplasm of the cell during tissue anabolism, is converted into kinetic heat and mechanical work plus the products of katabolism, as evidenced by the appearance of carbon dioxid and water in the pulmonic exhalations, and urea, uric acid, etc., in the renal excretion. But the maintenance of the nitrogenous equilibrium in this fever, as evidenced by the lack of emaciation and normal excretion of urea, would



CASE 2.

indicate the small rôle played by morphotic combustion in its production, and while not denying the causative agency of this form of combustion in the production of the pyrexia of other diseases, yet in my opinion it has but a limited place in the etiology of this affection.

Constructive metabolism is not believed by physiologists to be attended by the evolution of heat, but the nutritive pabulum which is not lifted up into the protoplasmic molecule, the *luxus consumption* of the ancients, also undergoes oxidation and contributes largely to the maintenance of normal bodily temperature, and principally to the production of this fever.

It is evident that the bodily heat produced by the combustion of floating proteids must vary inversely with constructive metabolism, the evidence of this is the elevation of temperature observed after a full meal, where there exists a "luxus consumption" to be oxidized, and the subnormal temperature observed during starvation, although tissue combustion is increased in the attempt to supply the requisite heat.

Under normal conditions of diet, exercise and health, the normal ratio between these two processes obtains, under the specific agency of the trophic nervous system; and with the aid of the vasomotor system in distributing and dissipating heat, the thermic balance between heat production and dissipation is maintained at 98.5 degrees F.

Now any inhibition of function of the vaso-motor and trophic nervous systems, arresting anabolism and diminishing heat dissipation, whether it be produced by surgical shock (surgical fever), in hysteria (hysterical fever), the passing of a sound (urethral fever), the irritation of bacteria or their toxins (specific fevers), exhaustion and fulminant uric-acidemia (the third fever), the transformation of energy, falling short in the work of anabolism, a lower grade of energy is produced in the form of animal heat. This heat, generated at such times and expended by the elevation of body temperature, is the mechanical equivalent of the arrested energy of anabolism.

The potentiality of the nutritive pabulum itself is of importance, the inhabitants of cold climates requiring food of higher potential energy than those of the tropics. According to physiologists 1 gram of fat = 9000 gram-calories; 1 gram of carbohydrates = 4000 gram-calories. Given a constant nutritive papulum, with a variable thermal environment, an increased demand for animal heat will necessitate diminished tissue building, a less demand, an increase, or else an over-production of heat to be eliminated. Therefore, if an Esquimau subsist on a vegetable diet, the entire potential energy of his nutritive pabulum would be transformed into kinetic heat, to meet the requirements of his environment, at the expense of tissue building. If an inhabitant of the tropics subsist upon fat, the high potentiality not being rendered latent in the formation of tissue (except in the case of growing children, and this explains their relative immunity against tropical environments) there would occur an over-production of animal heat.

As this theory of heat production is applicable to all fevers, it may be asked, what are the factors productive of the trophic inhibition? Beyond the physical exhaustion, incident to excessive work or exercise, involving exposure to the intense heat of a semi-tropical climate, there are produced during muscular metabolism large quantities of crystalline nitrogenous bodies, leucomains (uric acid group). In addition to this production, there is among carnivorous animals, a continuous introduction of these waste products, contained in their food. The daily consumption of 20 ounces of butcher's meat (soldier's ration) with its proportion of uric acid and allied leucomains, products of its own ante-mortem metabolism, must introduce a large quantity of these waste products into the system.

These bodies are soluble in the blood in direct ratio to its alkalinity, and are excreted in the urine. Any diminution of alkalinity must result in a deposition and consequent accumulation of uric acid *et al.* in the tissues. The alkalinity of the blood is lowered during the cold months, by reason of comparative sedentation, absence of sweating, increased consumption of nitrogenous food, combined with (at this post), excessive beer drinking. It is increased during warm months, in spite of nitrogenous and vinous ingesta, by excessive exercise, and especially through the

agency of the sweat glands in dissipating the acids of the blood.

Ninety per cent. of the heat elaborated in the human economy, is eliminated through the skin by radiation, conduction and evaporation. In this climate (southwest Texas), during three-fourths of the year, radiation and conduction are *nil* so that all the 90 per cent. of heat is eliminated by evaporation of sweat, with consequent increase of blood alkalinity. Now, any sudden excessive exercise, in a gouty subject, upon the advent of intensely hot weather, will result in a fulminating uric-acidemia, with a consequent shock to the vaso-motor and trophic nervous systems, together with the symptoms, high blood pressure, diminished metabolism, retention of waste products in muscular system, headache, partial suppression of urine, urine of high color and specific gravity.

It is to the fulmination of the intense uric-acidemia that the paresis of the nervous system is due, with resultant continued fever. Children are exempt to a large extent, from this fever by reason of the fact that all of their nitrogenous ingesta is utilized in the upbuilding of tissue; officers and women by reason of their comparative sedentation and consequent exemption of this fulmination of the uric-acidemia, do not suffer from inhibition of function of the vaso-motor and trophic nervous systems (fever), but do suffer to a marked extent from lithemia and neurasthenia.

I would define the affection as follows, a simple continued fever occurring in a gouty subject, primarily dependent upon a partial inhibition of function of the vaso-motor and trophic nervous systems, as a result of a fulminating uric-acidemia and physical exhaustion, consequent upon excessive and unaccustomed work or exercise, involving exposure to the intense heat of tropical or semi-tropical climates.

The limits of this article prevent an exhaustive discussion of all the facts and individual cases that might be advanced in support of my conception of the etiology of this affection. This paper is presented more as a suggestion than as a dogmatism, and while it represents my own personal convictions, yet a further study of the subject, with more elaborate methods of investigation, would be necessary before they can be accepted.

The writer has suggested the term febris auto-intoxica for reasons above indicated, but from its possible confusion with intestinal autotoxis it was withdrawn. Continued thermic fever, while a step forward, does not meet every requirement.

At the present time and in view of our uncertain ideas as regards its etiology, it is belived that "simple continued fever" expresses the condition as nearly as any.

At the time of these observations Widal's method of diagnosis had not been presented. The writer takes this opportunity of expressing from his own limited observations, his convictions of its efficacy, and with the aid of which he hopes in the future to be able to make a further study of so interesting a subject.

Prescription Taking Done to the Letter.—Abbe Huc, the renowned French explorer and missionary, says that when a Tartar doctor finds himself without his drugs and medicines, he is not in the least embarrassed. He writes the names of the needed drugs on slips of paper, and these, being rolled up in little balls, are swallowed by the sick man. "To swallow the name of a remedy, or the remedy itself," say the Tartars, "comes to precisely the same thing."—*St. Nicholas.*

A BRIEF HISTORY OF INSANITY AND TUBERCULOSIS IN THE SOUTHERN NEGRO.

BY THOS. J. McKIE, M.D.
WOODLAWN, S. C.

As a further elucidation of the subject of the etiology of tuberculosis and insanity in the southern negro is not without interest to the readers of the JOURNAL, as indicated by the able article of Dr. Powell and the discussion following, which appeared in the JOURNAL of December 5 of the year just past, the following brief history is offered as a record of the rise and progress of these allied diseases in a small portion of Edgefield County, on the extreme western border of South Carolina, and lying immediately between Stevens' Creek on the east and the Savannah River on the west.

Going back to 1848, when these observations began, it may be generally stated that tuberculosis and insanity were unknown and rarely heard of as diseases of the negro, in this section of our State; but, on the other hand, it was an admitted fact that he was peculiarly exempt from both. In 1866 the first case of tuberculosis ever seen in this locality by the writer occurred in the family of J. T. H., recently removed from the 96 section to the plantation of the late Governor Pickens, which lies in the fork of Stevens' Creek and Savannah River, nine miles above Augusta, Ga. This family (white) had already suffered a loss of several members before removal, and must therefore have brought the disease with them, or in them. No other white family has had a case.

The first case seen in the person of a southern negro happened in the family (man and wife) of J. H., who were servants to the white family H., both of whom died, as all who have since been attacked have done. Unlike the whites these two were previously considered healthy and of pure negro blood.

The next case occurred in the person of a married woman of mixed blood living seventeen miles north of the Pickens plantation, without social or other relation with any one on it, as far as could be ascertained. Soon other families began to suffer without regard to situation or social intercourse, showing, however, a predilection for certain families, whether living far or near. Especially has this characteristic been marked in the family of the woman of mixed blood, which has been well nigh destroyed, though quite a large one. In the aggregate, more families however of pure than mixed have succumbed.

Surprised and puzzled at this sudden and unaccountably new feature in the nosological table of negro complaints, it seemed not impossible that something of the true cause of tuberculosis might be gained here in a field where hitherto it had been entirely unknown, particularly in the southern negro, and a study of the diet, habits, mode of life, etc., of these stricken families was undertaken on the surrounding plantations and has been steadily pursued through the intervening year.

During this time many theories of its etiology have been advanced without having established one fact beyond the one of its wide prevalence in a region of country where before the establishment of a new order of things its existence was not known. Repeated inquiries made among fellows of the State Medical Society at their annual meetings, establishes the fact that very many have observed this change in the

character of disease in the negro, and many and various guesses have been made at the cause or causes that have brought it about. Among these, frequent mention has been made of scrofula and more of venereal, though neither seems to have anything to do with it, either as predisposing or exciting cause. In justice to the negro, be it said, taking into view his more limited moral training, his fewer social restraints, his unrestricted fields of social indulgence, his less refinement in the practice of vice or virtue, his want of knowledge of the baleful influence of the resulting evils, and he need not fear comparison with his more enlightened white neighbor, though both have kept comparative free from disease of this kind, contamination proving the rare exception in either. The co-existence of tuberculosis with syphilis, hereditary or otherwise, has not been observed in any case, notwithstanding the fact of a professional acquaintance with the diseases of several of these families which extends back to the days of slavery, when both[1] syphilis and tuberculosis were entire strangers in the rural districts to which these observations relate

Freedom from restraint permitting freer indulgence in all manner of excess, absence of regard for hygienic law or practice, excess in eating and drinking, the want of wholesome food, especially of the accustomed ration of fat bacon, have all had a place in the etiological table without sufficient reason for being there. In the ante-bellum ration, hog meat (bacon) and corn bread held first place for working people. For children, corn bread, pot liquor, milk, usually buttermilk, syrup or molasses formed the staple articles of diet, though meat (bacon) was not prohibited. Under the new dispensation, wheat bread of inferior quality and for the most part execrably prepared, took the place of corn bread (which the negro cooks as no other can), as milk and butter did the place of bacon. Here, it was at one time thought, might be found one of the causes which gave rise to tuberculosis, but further observation proved the fact that the most thriftless, with or without the use of milk or wheat bread, the most indifferent to the forms and usages of civilized life escaped the disease.

A population of 900 to 1,200 occupying an area of territory twenty by five miles in extent, and divided into plantations of creek, river and uplands, these latter for the most part broken and hilly, compose the material from which these observations are drawn, and will compare favorably with occupants of neighboring plantations in point of general health conditions. Continuing these observations with unabated interest it was noted that the most elegant, the most refined, well-to-do families supplied by far the greatest number of insane and tuberculous subjects. The most successful, those who seem to put forth the greatest effort to imitate the better class of their white neighbors, those living in the best houses, which are well kept and well supplied with the necessary comforts of life, are the chief if not the only sufferers. To attain this higher degree of civilization requires some ambition and far more than ordinary mental effort on the part of a people who had hitherto been totally unaccustomed to such mental strain, and who are equally unfitted either by nature, education or practice to assume these grave responsibilities, and as a consequence the penalty of an overworked nervous organization, never strong, but delicate and sensitive in the extreme, must naturally follow.

It is a well-known fact that the negro's perceptive faculties are little inferior to those of the lower class animals. His olfactories are delicate, his vision is keen, far surpassing that of the Caucasian, particularly in the absence of strong light and at night; nor can any epicure boast the equal of his gustatory apparatus. Mentality or cerebral excitement but tends to insanity, and, when under continuous strain as in the struggle to get forward in the world, to its cousin german, tuberculosis. At least such has been the course marked in these observations. Religious frenzy has been a frequent precursor if not a cause of insanity. Several cases can now be recalled in which fatal results have followed attacks beginning in church during religious excitement. One fatal case can also be recalled in which unsatisfactory division of crops gave rise to it.

From the observations it may be concluded that in their etiologic relations insanity and tuberculosis are allied diseases; that both tuberculosis and insanity in the Southern negro have been the outcome of an overtaxed and overworked nervous organization unfitted by nature and otherwise to bear the burden imposed by newly created necessities or environment; that insanity and tuberculosis are *primarily and essentially neuroses.*

[1] Only two cases of syphilis happening before 1865 can now be recalled, one in a girl of 15, the other a man, both on the same plantation, and contracted in Augusta, Ga.

AN AORTA WITH A DOUBLE ARCH.

BY D. LEE SHAW, M.D.

ASSISTANT TO THE CHAIR OF ANATOMY, RUSH MEDICAL COLLEGE. CHICAGO.

Congenital malformations of the aorta are comparatively rare. Quain divides such cases into six classes, viz.: 1, variations in position and extent; 2, variations of septum; 3, variations of stems; 4, variations of arch; 5, variations of descending portion and ductus arteriosus, and 6, variations in number and position of branches. The most uncommon of all, are those of the fourth variety, under which the double arch will be described.

In mammals the aorta normally passes to the left side of vertebral column, arching over the root of the left lung; in birds it passes to the right; and in reptiles it divides and passes to both sides. In this instance the arch presents a reproduction of the reptilian arrangement.

This specimen was taken from a fairly well nourished, white, male subject, in the anatomic laboratory of Rush Medical College. Previous condition and cause of death is unknown. No abnormalities were found in the venous system. The heart is 12 cm. in length, muscle normal, and the cavities are perfectly formed; no communication whatever exists between right and left sides. Pulmonary artery is normal in position and distribution, although, from its point of division, a septum 2 cm. in length extends into the main trunk.

Arch of the aorta, ascending portion, is 2.5 cm. in diameter and in its usual position. It divides, 3 cm. above the pericardial attachment, into a small left branch and a large right branch. The left division, 1.5 cm. in diameter, passes in front of the trachea, in the position of the normal arch; and 2 cm. from its origin, at the left antero-lateral aspect of the trachea, gives off the left common carotid; immediately behind which the left subclavian arises. The left arterial trunk is continued by an isthmus, .75 cm. in diameter

and .5 cm. length, which, with the ductus arteriosus, joins a dilated portion, 2 cm. in diameter and 1.5 cm. in length, which extends backward to the left of the trachea and esophagus, and communicates with the right branch. The ductus arteriosus is a firm round cord in normal position and is not patulous.

The right division, 2.5 cm. in diameter, passes upward, along the right side of the trachea, reaching the level of the third dorsal vertebra; and 2 cm. from its origin, it gives off the right common carotid and 2.5 cm. beyond this, from the highest part of the aorta, the right subclavian arises. Beyond the origin of this vessel the right branch passes downward and backward, 3.5 cm., and behind the esophagus, unites with the left to form the descending aorta, which extended downward along the right sides of the dorsal vertebræ, from the fourth to the seventh inclusive,

Heart with large arteries. Anterior view.

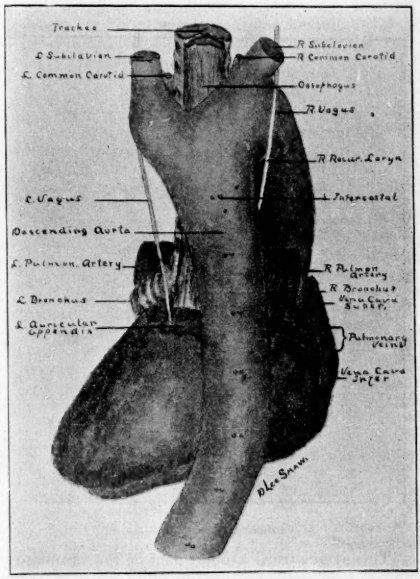
and, on the body of the eighth, crossed diagonally to the left side and continued below in its usual position. No septum is found in the descending aorta.

The pneumogastric nerve, on either side, lies between the common carotid and subclavian arteries. The left crosses the isthmus and its recurrent laryngeal branch winds under the ductus arteriosus, in the normal position. The right passes downward over the main arch, under which the recurrent branch of this side is given off. Similar cases have been reported by Hommel, Curnow, Malacarne, Zagorski and Welch.

Hommel, in 1737, was the first to record findings of this character. In his case, according to Meckel, the two divisions united after encircling the trachea, and passed downward on the left side of the vertebral column.

Malacarne's report, as described by Meckel and Quain, differs from all the others. Five valves guarded the aortic opening of the left ventricle and the arterial trunk immediately divided into two branches, which before uniting, embraced the pulmonary artery, trachea and esophagus; from each division, was given off in succession, a subclavian, an external and an internal carotid artery. In Welch's case, the posterior branch passed between the trachea and esophagus and, from each division arose a common carotid and a subclavian artery. On the posterior branch, was found an aneurysm from which the right common carotid took origin.

My specimen differs from all of those described, except Malacarne's, in that the two divisions unite behind the esophagus. It differs from all, in that the right branch is the larger, the junction of the two



Heart and aorta. Posterior view.

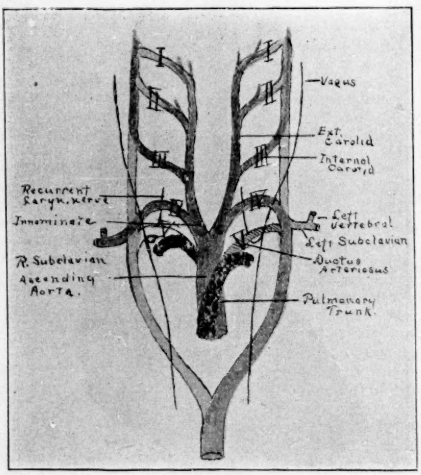
branches is on the right side and the descending aorta passes downward on the right side, to the upper border of the eighth dorsal vertebra.

This arrangement not only resembles the vascular rudiment in the reptile, but also more closely follows the distribution in the bird, than does it that in the mammal.

These congenital malformations of the large arterial trunks, are probably due to the persistence and enlargement of fetal vessels which normally become obliterated. From the aortic bulb of the embryonal heart, which is situated under the cephalic extremity, two vessels arch backward, one on either side of the foregut, forming the first pair of vascular arches, and descend along the sides of the notochord as the primitive aortæ. As the heart is gradually moved away from the head, four more pairs of vessels are succes-

sively developed, which connect the bulb with the descending trunks; making in all, five pairs of vascular arches or one for each branchial plate. Zimmerman describes an additional pair between the fourth and fifth.

The bulb, primarily a single cavity from which, through two common trunks, one on each side, blood is sent to all the arches, is divided by a septum parallel to its long axis, into two compartments; one becoming the pulmonary artery, situated anteriorly, and continuous with the fifth pair of arches, the other forming the systemic aorta, placed posteriorly, and communicating with the fourth pair, through which all the arches above receive their blood supply. Notwithstanding this separation near the heart, both pairs of arches, *i. e.*, the fourth and fifth, ultimately empty into the descending aorta which has been formed by the coalescence of the primitive aortæ.



Vascular arches. [After Quain.]

This symmetrical arrangement of the vascular system is soon destroyed by the obliteration of certain vessels. Even before the last arch is perfectly formed the connections between the first pair and the descending aortæ may be destroyed. However, the fourth and fifth arches, lying nearest the heart and soon exceeding the others in size, are the chief factors in this transformation. The vascular arches on the left side continue to increase in size and in greater part become permanent, while those on the right gradually become obliterated, except where they furnish the supply to permanent arteries.

On the left side the fourth arch becomes the arch of the aorta and, in the fetus, is constricted between the origin of the left subclavian and the junction of the ductus arteriosus, forming the isthmus, which, soon after the closure of the duct, attains the diameter of the adjacent trunk. The fifth, on this side, forms a part of the left pulmonary artery and the ductus arteriosus, which is occluded soon after birth but remains as a round cord. On the right side the fourth arch is permanent for a short distance as the innominate and right subclavian arteries, as far as the origin of the vertebral, beyond which it diminishes in size and finally disappears. Only a small portion of the fifth persists on this side as the root of the right pulmonary artery; the distal portion becomes obliterated.

In this case, the fourth arch of the right side has not only remained patulous throughout, but has exceeded the left in size. The fourth arch of the left side has retained some of its fetal characteristics; because it was doubtless unnecessary for the isthmus to enlarge after occlusion of the ductus arteriosus, as the blood current could readily pass through the right arch.

The position of the recurrent laryngeal nerves is due to the fact that they pass to the larynx from the vagi under the fifth pair of arches, while the heart is well forward, and, as this organ assumes its position in the chest, these nerves are drawn down by the vessels and, consequently, are eventually found, on each side, looping under the lowest permanent arch.

34 Washington St., Chicago.

ACROMEGALY—WITH A CASE.

Read before the Georgia, Tennessee and Alabama Tri-State Medical Society at its Seventh Annual Meeting.

BY J. R. RATHMELL, A.M., M.D.

PROFESSOR OF OBSTETRICS AND DISEASES OF CHILDREN AND CLINICAL MEDICINE, CHATTANOOGA MEDICAL COLLEGE.

CHATTANOOGA, TENN.

Dr. Paul Marie of Paris, in 1886, gave to the medical world a classic description of certain rare pathologic conditions and appearances to which, though noted possibly for many years, he gave the name *Acromegaly*, thus adding to medical nomenclature a new word. This word is a combination of two Greek words, meaning enlarged extremity. But the term is elastic enough to cover more territory than just what its root words signify, so that in general, *acromegaly* may be defined as a symmetrical enlargement of the extremities and face.

Reported cases studied to the present time apparently fix five facts, viz., that hereditary influences cut no figure in causation; that the disease usually appears between 12 and 30 years of age; preponderates in males; that theorists are at sea as to the causes, and that all treatment up to date is unavailing.

To account for the simultaneous and abnormal growth of the supraorbital arches, the malar eminences thick nose and lips, the protruding chin, the enlarged bony arches of the jaws, the voluminous tongue, the big spade-like hands, with sausage shaped fingers, the feet showing same changes as the hands, and toes same as fingers; to show why, as the disease progresses, the strength diminishes; there is loss of precision in and coördination of movements; for failing sight, lassitude, apathy, slowness in movements, defective memory, amnesic aphasia and other symptoms I shall not now list, is the question. It was to ascertain the central causes of these conditions that led Marie, Klebs, Virchow, Friedrich and others to make their investigations. Several of the theories contemplated the involvement of one or more of the ductless glands and glandular structures. Klebs advanced the theory that the disease was due to the persistence of the thyroid—a ductless gland. Virchow maintained that the macroscopic appearances were simply the terminal stages of conditions whose early periods were not rec-

ognized. Marie's theory claimed the disease to be of neurotic origin, and dependent upon the involvement of the pituitary body—a ductless gland—as the essential feature. Others again theorized to disprove the existing theories by stating that the pituitary body had been found enlarged without the presence of acromegaly; also the entire absence of this body had been observed and no symptoms of the disease were present; that the thyroid gland, the spleen, thymus gland and suprarenal capsules have all been diseased and yet no acromegaly existed. Others again show a close relation between this disease and cretinism, myxedema, ostitis deformans. So in view of this uncertain state of things we seem to be sure of three facts, as gathered from the literature on this subject, viz.: we have a disease, a name and a description.

While I shall not be able to add anything new in the way of discovering any predisposing or exciting causes and bring forth anything new in the pathology of this disease, yet I desire to add to the list of reported cases yet one other, which not only has many of the symptoms common to the cases already reported, but also some features that, so far as I have been able to ascertain, have not been mentioned.

On Dec. 17, 1894, there came into my office a man complaining of shortness of breath that at times distressed him so much he could scarcely live. He also stated that he was so extremely weak at times that he was compelled to sit down to keep from falling; also that he had great difficulty to keep his food and drink on his stomach. So soon as he would take nourishment, the stomach ejected it like a bullet from a gun. He was born in England, of English parents, and he gave his age as 52 years, height five feet eight inches, weight 165 pounds.

I observed that he was pale, in fact the skin was extremely white, with a purplish hue to the lips. The face large and broad; brow heavy; orbital arches prominent, due to dilatation of the frontal sinuses; cheek bones prominent, due to dilatation of the maxillary sinuses; nose large; lips thickened; jaw protruding; chin large; the junction of body of jaw with inferior maxillary formed an obtuse angle; tongue broad, thick, smooth, yet slightly fissured, filling the whole mouth, making it quite difficult to articulate distinctly. The neck was short, thick, letting the head well down between the shoulders. Spinal column slightly kyphotic in the cervico-dorsal region. The muscular system was well developed, having been an iron-worker as well as a farmer, but his extreme weakness greatly annoyed him. His feet and hands were cold all the time, he said, though he had them well protected. Fire even did not warm them. Examination of the lungs revealed them to be sound, but the heart showed hypertrophy and some dilatation, with an occasional loss of a beat. The cardiac symptoms led me to suspect something wrong with the valvular arrangement, though nothing could be definitely determined. Pulse was small and feeble. The hands were very large in all their dimensions. The fingers were thickened and nails broad. The hands looked like paddles. The feet, like the hands, had grown to an abnormal size. The toes, especially the big toes, had thickened and lengthened until they were odd-looking appendages.

About fourteen years previously, he noticed a change taking place in the size of his hands, feet and face. But progress was very slow. About eight years ago his attention was called to his vomiting his food occasionally, and also to the peculiar manner in which he did it. He was not nauseated nor sick, but would suddenly empty his stomach. He thought this dyspepsia, as it was called, was produced by the water of a certain spring from which he was drinking. He noticed that the food and water would return unchanged in character. He was treated by the profession for dyspepsia, but without good results. For some time before coming to my office he said he had suffered occasionally from difficulty of breathing, which he could not explain. He did not think he suffered from asthma. He gave no history of syphilis, alcoholism, insanity or any hereditary disease.

After trying to meet the indication for treatment with the proper remedies, he went to his home three miles in the country. Early in January, I was called to see him at his home. He was spending his time about equally between lying in bed and sitting up in a rocking-chair before the fire. His loss of strength had increased; he could keep no nourishment or drinks on his stomach, and was having at intervals great distress from the peculiar character of breathing. He had lost rapidly since I saw him. He had a good appetite, was hungry and thirsty all the time, but the stomach refused to retain anything.

I wish to call your particular attention to this refusal of the stomach to retain nourishment, and also to the abnormal rhythm in the respiratory act. The vomiting I regarded as reflex, of cerebral origin. The peculiar spasmodic breathing was of the Cheyne-Stokes variety, which indicated a disturbance of the equilibrium of the respiratory act at the breathing center. The breathing was irregular day and night until three weeks before death, when he seemed to get some better in this respect. The pause between the respiratory movements lasted ordinarily a half minute, sometimes reaching a whole minute. To compensate for this cessation, the respiratory movements, at first feeble, increased rapidly until in the succeeding thirty seconds there would be eighteen respirations, when apnea would be overcome and another rest in breathing followed. This continued day and night incessantly, whether asleep or awake. Sometimes these storms of breathing were so terrific that upon two occasions the interval of rest was so long the friends thought him dead, but he rallied and breathed again. The severest attacks of spasmodic breathing occurred at night.

As to the physical symptoms—his dulness, apathy and inability to think and articulate—these continued to increase until the end, yet at no time was he totally unconscious. He had great difficulty in finding suitable words to express his idea. This form of amnesic aphasia is not uncommon in acromegaly.

Being unable to retain food in the stomach he was nourished wholly by the rectum. Thus he was kept alive, though the waste of the system was not counteracted, by enemas of milk, eggs, wines, etc., from January 5 to March 29 following, when he died. He was nourished by enemas about thirteen weeks. His body wasted rapidly during the last of the illness, so that the abnormally large bones were made more prominent thereby.

His death was by apnea. The end came during one of the spasms of abnormal respiration.

Assisted by Dr. W. C. Townes, postmortem examination was made six hours after death. The skin was exceedingly white, but the lips and finger nails were blue. Rigor mortis had begun but had reached only a slight degree.

The circumference of the head through the occipito-mental diameter measured 27½ inches; from the angle of the face to the symphysis, 4¾ inches; circumference of hand around the palm, 10¼ inches; width of palm, 4½ inches.

The costo-cartilages were completely calcified so that it was necessary to saw them in two in order to open the thorax. The lungs were sound with calcified points, size of a millet-seed on the surface. The heart was hypertrophied, but no evidence of valvular disease. There was no calcareous deposit in the endocardial region. The right ventricle was filled with blood; the left partially so. Heart stopped in diastole. Postmortem and antemortem clots had formed in both ventricles. No disease of the heart was discernible. The mucous membrane of the stomach was highly congested, and enlarged blood vessels roughened its surface. This condition is most likely accounted for by the long absence of food. A small upper portion of the ileum was filled with fecal matter of considerable consistence; the lower part was filled with gas. The large intestine was normal, except an occasional enlarged gland undergoing cheesy degeneration, probably antecedent to calcification. Appendix vermiformis was normal.

An indenture on the external surface of the calvarium, posterior to the coronal suture on right side, indicated that at some time the skull had received a blow from some blunt instrument. No history, however, of an injury having been received was obtained. The internal surface of the skull was roughened by a number—a dozen or more or less—of sharp-pointed spinous projections, varying from one-sixteenth to one-eight of an inch in length, which pressed hard upon the dura mater.

The upper surface of the hemispheres of the brain was apparently normal. The base, however, showed an imperforate and knotted condition of the posterior cerebral artery on the left side. It looked like a string of beads. The remaining portion of the surface of the base was normal, except in the region of the sella turcica, where the pituitary body was greatly enlarged. This glandular structure had grown to the dimensions of a medium-sized hen's egg. The dura mater round and about it was calcified, and it was difficult to remove the body from its attachments. The average weight of this body is from 5 to 10 grains, but this one weighed, after having lain in alcohol six months, 476 grains.

The questions that naturally arise are: Did the growth of this gland cause the peculiar enlargement of the face, hands and feet? What caused the obstinate vomiting, and what produced the Cheyne-Stokes respiration?

SEPTIC DISEASES OF THE KNEE JOINT.

Read before the Wabasha County Medical Society.

HY C. H. MAYO, M.D.
SURGEON TO ST. MARY'S HOSPITAL,
ROCHESTER, MINN.

The great size and peculiar formation of the knee joint, with its many communicating bursæ, render its destruction probable by infection, and the loss of the limb, or life itself, is of comparative frequency.

A brief review of the more important of its anatomic features will explain why sepsis is so destructive.

The strength of this largest articulation of the body is in its powerful ligaments, which unite its opposing surfaces, articulating only by contact. The bony axis of the limb changes at the knee, the femur slanting inward from above and the tibia being vertical. The lateral ligaments of the joint have the least strength. The posterior are strong and the capsule becomes ligamentous anteriorly. The most powerful and important ligaments of the joint are the crucial. The synovial membrane extends above the patella and beneath the extensor tendon, the cul-de-sac reaching a point one inch or more above the trochlear surface of the femur. Above the synovial sac is a bursa about one inch long separating the quadriceps tendon from the femur and communicating with the joint in four out of five cases. The upper third of the ligamentum patellæ is separated from the synovial sac by a pad of fat, the lower two-thirds are in relation to the bursa interposed between it and the tubercle of the tibia. In the popliteal space interposed between the internal condyle of the femur, the inner head of the gastrocnemius and the semimembranosus is another bursa usually communicating with the knee joint. The bursa beneath the popliteus tendon always connects with the joint and usually with the tibio-fibular articulation. The posterior part of the synovial sac has other bursal pouches in the adult. The epiphyseal line of the femur is intracapsular, showing the route of infection in the complicating joint abscess, occurring in some cases of periosteal and osteomyelitic diseases, and the source of effusion in fractures involving this region.

In a consideration of septic diseases of the knee joint we are only concerned in the more simple injuries causing synovitis, when auto-infection renders them septic. The entrance of blood into the joint is of the same significance, as a slight injury may occasion a hemorrhage, which never entirely coagulates, regardless of the quantity effused, but mixes with the synovia, and its absorption is extremely slow. These cases, through delay in absorption, or improper management, may develop the simple purulent synovitis.

Acute purulent synovitis occurs in young children, as a rule, in the first few weeks of life, and has been considered a probable umbilical infection. These cases discharge early and in most cases the joint function is not permanently impaired—as shown by Krause and Volkmann. In a case of doubt concerning the character of a joint effusion the hypodermic can be used for aspiration with the same freedom as it is now used on the chest to demonstrate fluids in the pleura. The withdrawal of a small quantity of serous effusion has the same effect as is so frequently noticed in the pleura, the stimulation of absorption. In the more simple purulent collections, a large caliber hypodermic needle can be used to withdraw the contents of the joint, and then distend it with a 1 to 1000 bichlorid solution. After a massage of the joint withdraw the bichlorid solution, repeating the process with normal salt solution.

Gonorrheal synovitis, which has been shown by Councilman and Ott to be due to auto-infection by the gonococcus, may be treated in the same manner, after a thorough trial of large doses of potassium iodid has been made without relief.

Penetrating wounds of the knee joint, including incised, punctured, lacerated and gunshot injuries, are well classed among the most dangerous of bodily injuries not proving immediately fatal. Their gravity depends solely upon the introduction of septic matter into a serous cavity at the time of injury, or during its subsequent care.

The simpler forms of lacerated and punctured wounds are the most frequent, as distinguished from the complicated cases in which the injuries to adjacent structures may be of more serious consequence than the opening of the joint. Where the wound is small and the synovial sac not visible great care must be exercised in judging of joint penetration. The free flow of synovial fluid may only indicate the opening of a bursa, or large tendon sheath; the rapid distension of the joint with blood may also come from a contusion, without joint penetration.

In cases in which the nature of the injury would indicate a possible foreign body, septic origin or contamination, the probable diagnosis must be confirmed by exploration of the wound, under strict antiseptic precautions, when, should the synovial sac be found opened, the interior of the joint should be thoroughly flushed with a 1 to 1000 bichlorid solution and drainage established, preferably by means of folded rubber tissue, and a copious dressing applied. In cases of joint injury where we can be reasonably certain of an aseptic wound, an antiseptic dressing may be applied, with rest of joint, awaiting the development of symptoms before further interference.

Should infection occur during treatment, the incision should be enlarged, antiseptic irrigation applied and freer drainage established. Synovia may flow for several days, and unless infection supervene, a perfect recovery results. In those cases in which infection occurs the result obtained will depend upon several factors, viz.: The nature and degree of infection, the freedom of drainage and the treatment applied. Infection produced by the less virulent pus-producing germs may not be clinically demonstrable for from two to seven days. The turbid effusion filled with flakes of lymph will then indicate vascularization of the synovial sac. The joint becomes red, swollen, painful and tender; a chill more or less severe indicates the commencement of infection.

Systemic toxemia is evidenced by a fever, which continues as long as the joint is distended with pus. In the less virulent infection, if a free drainage is secured, the joint structures may be maintained and a fair degree of joint function preserved, even after several weeks of discharge. Insufficient drainage, or a more virulent form of infection, may rapidly so disintegrate the joint structures that a functional result is impossible. The ligaments become softened, the cartilages necrosed and separated, the synovial membrane thickened and the extension of the purulent process into adjacent bursæ and tendon sheaths develops abscesses in the thigh and posterior tibial regions. The limb is enormously swollen and the general septic condition is very marked. Life may be saved and recovery hastened by an early amputation, otherwise death may ensue from toxemia, or after months of discharge life and limb may be saved, with a functionless joint.

In the case of streptococcus infection, the course is more rapid and death frequently occurs early, from phlebitis, gangrene or septicemia. In mild or mixed infections secondary to chronic joint disease it is possible to have a walling off of the abscess in a portion of the synovial pouch, as mentioned by Andrews, similar to like conditions in the peritoneum or pleura. Gunshot wounds of this joint require the same care as the lacerated and punctured wounds. Injuries by large missiles require exploration, and in case of serious bone injury a partial arthrectomy may be necessary, while those made by small caliber bullets may be treated as doubtful cases until interference is demanded by the symptoms developed.

Bullets are usually sterile, but there is always danger from the particles of clothing carried in by them. In gunshot wounds of this joint, unless serious hemorrhage occur requiring control, the first consideration is the application of an antiseptic dressing. Dividing the knee-joint cavity into spaces and treating suppuration by drainage with four to six drainage tubes, as recommended by Andrews and Gerster, suffice for some cases, and may be supplemented by a tube drain through the popliteal space, as practiced by Hartley. Edmond Owen recommends the vertical incision on either side of the patella, and in some cases to connect the two incisions by cutting the patella ligament.

Frederic S. Dennis and Roswell Park report cases successfully treated by continuous irrigation or immersions in weak antiseptic fluids. The one essential feature in the treatment of the more serious forms of phlegmonous inflammation of the joint is free drainage. The transverse incision from prominence to prominence of the condyles across the front of the joint, as made for resection, presents the freer exposure for dry gauze pack of all parts of the joint, or the use of the gauze pack saturated with a solution of 5 per cent. balsam Peru in castor oil, so successfully employed by W. W. Van Arsdale in the treatment of suppurating wounds. This incision will accomplish all that an amputation can promise, with less shock and with the saving of a useful limb, and in many cases a limited degree of motion.

In three cases in which the patella was severed through its center, the two halves afforded a firm hold for passing sutures behind and closing the joint at a later period.

In the January, 1895, issue of the *Annals of Surgery*, is reported my first case treated in this manner and the successful treatment of four similar cases in the past two years, leads me to emphasize my former statements. Two of these cases have one-fourth motion. In the *Annals of Surgery*, Vol. XXII, page 503, in report of transactions of the New York Surgical Section, is the following from Dr. Arpad Gerster, which so perfectly describes the treatment, I present part of it here: "Dr. Mayo's suggestion struck him as very plausible, and he has applied it in two cases. The result had been excellent. As all know, these acute forms of joint phlegmon necessarily end in ankylosis, if, indeed, they do not cause loss of limb or life. The cartilaginous covering of the bones forming the joint is destroyed, and therefore ankylosis is inevitable. Knowing this fact, the surgeon in adopting this method of treatment frankly accepts the necessity for ankylosis. The road then becames very clear. The treatment consists in laying the joint open by a transverse incision, extending from one condyle to the other, just as a joint is laid open for resection. Then as many more incisions are made as may be necessary, in order to open up every collection of pus or fluid in or about the joint. The capsule in all these cases is very intumescent and swollen, and for this reason occludes all drainage tubes in a way to make retention inevitable. Then lay the joint freely open, removing or not removing tissues, as the case may be, pack and drain every recess, and treat it as an open wound. It is astonishing how rapidly the phleg-

monous process ceases, when compared with other methods of treatment. After the symptoms of active inflammation have subsided, the joint is put in proper position and ankylosis is allowed to take place."

THE IMPORTANCE OF SYSTEMATIC EXAMINATIONS OF UTERINE SCRAPINGS AND EXCISED PORTIONS OF THE CERVIX.

BY PALMER FINDLEY, M.D.

CLINICAL INSTRUCTOR OF GYNECOLOGY, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.

CHICAGO.

This paper has for its object: 1, the emphasis of the importance of systematic examinations of uterine scrapings and excised portions as an aid to diagnosis in gynecology; 2, the presentation of a well known method of making such examinations; 3, the setting forth of its limitations; 4, the relation of the microscopic to the macroscopic appearances; 5, the relation of the microscopic findings to the clinical manifestations.

It will be the purpose of the writer to demonstrate that such systematic examinations can be made by all who have a practical knowledge of microscopy; that without such systematic examinations a malignant growth will often escape detection until clinical manifestations point to a growth too far advanced to permit of a radical removal, and that many times such an examination is the only means of making a positive early diagnosis. It is the custom of the writer to preserve for examination all products of curettage, to make a systematic microscopic examination of them, which is kept on record, and to which subsequent reference can be made. All who have followed this routine method can not fail to appreciate the importance of such examinations. Where a malignant growth has not been suspected it has been detected in its early development; on the other hand, a condition highly suspicious of malignancy has been proven innocent. In the majority of cases the microscope has only served to verify the clinical diagnosis. Not infrequently has a timely hysterectomy been performed as a direct result of the microscopic findings, and, on the contrary, where the clinical symptoms strongly indicated a hysterectomy for a malignant growth the microscopic examination contraindicated and precluded the radical and formidable operation. It is therefore evident that the greater part of the examinations will no more than verify the clinical diagnosis, yet the occasional finding of an unsuspected malignant condition, the verification of a suspicion and the disqualification of a wrong clinical diagnosis will be sufficient reward for the time and labor expended. The practice of making these examinations is becoming more general. The busy surgeon usually trusts the work to an assistant pathologist or colleague, and in most hospitals such examinations are made as a matter of routine by the resident pathologist.

The folowing method adopted by the writer will be presented in the belief that it will be found to be the most reliable and simple method for diagnostic purposes; it is the simple method of practical utility to the general surgeon. Where original research in the histologic and microchemic methods is desired the reader is referred to modern works on microscopy.

Because of the difficulty in obtaining sections of the mucous membrane of the corpus uteri the tissues are best obtained by curettage; while with the cervix the mucous membrane is so closely adherent to the underlying tissues and the desired tissue is so easily excised it is preferable to remove a wedge-shaped piece of the cervix for an examination. The section should include some healthy tissue, in order to make a microscopic field of the entire pathologic condition together with some healthy tissue. Scrapings are never so satisfactory for examination as are excised pieces; the relations of the histologic elements are disturbed, the extent of the lesion can never be ascertained, and though the scrapings may show only inflammatory changes the underlying tissue may be the seat of a malignant growth.

CELLOIDIN EMBEDDING METHOD.

The scrapings and excised pieces are first cleansed of blood in cold water. They are then placed in a 4 per cent. aqueous solution formalin for twelve hours, then in 50 per cent. alcohol for twenty-four hours, next in 70 per cent. alcohol for twenty-four hours, followed by 95 per cent. alcohol for twenty-four hours, and finally hardened in absolute alcohol for twenty-four hours. The specimen may be placed directly in 50 per cent. alcohol without fixing in formalin, and if the sections are small they may be placed directly in 95 per cent. alcohol for twenty-four to forty-eight hours and then in absolute alcohol for twenty-four to forty-eight hours. After the tissue is thoroughly hardened in the alcohol solutions they are placed in a dilute solution of celloidin for twenty-four hours. If the solution is quite dilute it is not necessary to precede this step by placing them in a solution of equal parts of commercial ether and absolute alcohol for twelve to twenty-four hours, thus saving time. The next step is to place them in a thick solution of celloidin for twelve hours, then mount on cork or a block of wood in celloidin, expose the mounted specimen to the open air for a few minutes, then place in 70 per cent. alcohol for a few hours and the specimen is ready for section cutting. The most satisfactory stain is the double stain of hematoxylin and eosin. In this way about eight days are required, but the actual time spent in the work is not so great providing all necessary material is at hand. Where time is an essential factor the paraffin method may be adopted and the specimen ready in forty-eight to seventy-two hours. For serial sections the paraffin method may be used, but for ordinary usage the serious objection to its use is the necessity of an oven for the purpose of keeping the paraffin at the proper temperature. Dr. Cullen of Johns Hopkins University has presented to the profession a freezing method by which the examination can be made in fifty to sixty minutes.[1]

The steps in the method are, in brief: 1, tissues cut with a freezing microtome; 2, sections fixed in a 4 per cent. formalin solution, three to five minutes; 3, 50 per cent. alcohol, three minutes; 4, absolute alcohol for one minute; 5, stain and mount. By this method it is possible in a doubtful case to determine upon further operative procedures within an hour after the exploratory curettage, and hence is of the greatest value in those exceptional cases where an immediate diagnosis is imperative, otherwise it is not satisfactory because of the hasty and imperfect preparation of the section for microscopic examination.

By way of illustrating the importance of such examinations the writer will briefly mention his

[1] For a full description of the method see Johns Hopkins Bulletin, No. 49, April, 1895.

experience of the past two months in the examination of scrapings. In all cases clinically diagnosed as chronic endometritis the microscopic examination of the scrapings verified the diagnosis. Where the diagnosis was in doubt from a clinical point of view the microscope was indispensable. The following cases occurred in the practice of Dr. E. C. Dudley of Chicago, they have been reported in detail and will here only be referred to in brief for the purpose of illustrating the value of systematic examinations of uterine scrapings in diagnosis:[2]

Case 1.—Was deaf, hence no history could be obtained further than that she is 40 years of age, had menstruated regularly until the last two months, during which time she has flowed almost constantly. For two weeks the flow has been increased in amount and has had an offensive odor. The patient denied the possibility of pregnancy. Dr. Dudley examined the uterus under ether and found it free of adhesions, regular in outline and about the size of a fetal head at term and of the consistency of a pregnant uterus. From the physical examination Dr. Dudley believed it to be a pregnant uterus, but decided to explore the uterine cavity because of the negative history of pregnancy and the offensive bloody discharge. Accordingly a curette was introduced, the instrument went to the handle, an incident which for the time suggested the possibility of having penetrated the uterine wall. An offensive sloughing mass was withdrawn by the curette. From the naked-eye appearances this mass was thought to be either placental tissue, sloughing fibroid or a malignant growth.

The scrapings were examined by Dr. Eisendrath, pathologist of St. Luke's Hospital, by whom chorionic villi were demonstrated. Three days later the woman was delivered of a sloughing fetal mass which bore evidence of having lain dead in the uterine cavity several weeks. In this case the history was entirely misleading and the symptoms and local condition indicated operative interference. The microscopic examination was made in a few minutes, the specimens were neither hardened nor stained. Simply a thin section of the scrapings was made with a razor and examined under a low magnifying power.

Case 2.—Mrs. B., age 45, American. Attending physician, Franklin B. Favill of Chicago. The clinical history was that of a chronic endometritis together with some loss of flesh, nausea, loss of appetite, menorrhagia which had existed for two years and in the past two months was followed by an odorless watery discharge. Dr. E. C. Dudley performed an exploratory curettage October, 1896. Profuse vegetations were removed by the sharp curette. On examination of the scrapings I found adeno-carcinoma of the corpus uteri in its early development. The diagnosis was confirmed by Dr. Arthur Edwards of Chicago and afterward by examination of the sections of the uterus. Dr. Dudley, assisted by the attending physician, Dr. Favill, Dr. William H. Rumph and the writer, removed the uterus per vagina two weeks later. Since the exploratory curettage the uterine growth was seen to have almost filled the uterine cavity and to the naked eye appeared as a soft, red villous growth confined to the endometrium. Sections of the uterine wall including the growth were examined, and the atypical glandular growth demonstrated to have extended into the underlying tissue to a considerable depth. It is hoped that a radical removal of the growth is effected. This case would undoubtedly have passed for a chronic endometritis had no microscopic examination been made.

Case 3.—Mrs. H., age 46; was undoubtedly approaching the menopause, the menses had become more and more infrequent and scant. Six months ago she began to flow profusely and frequently and six weeks later the menorrhagia was followed by a watery discharge, which had a disagreeable odor. An exploratory curettage was made by Dr. Dudley, in which he removed a submucous polypus from the corpus uteri. Upon examination of the scrapings I was able to demonstrate the presence of a round-cell sarcoma of the corpus. The round cells were mixed with a lesser number of spindle cells and a few giant cells. Notwithstanding the fact that the patient had marked symptoms of uremia from a chronic nephritis which had existed for an unknown period prior to the exploratory curettage, the urine containing a large amount of albumin, granular casts, blood in great quantities and 200 grains of urea secreted in twenty-four hours; a vaginal hysterectomy was performed by Dr. Dudley, assisted by Dr. Franklin Favill, Dr. Peterson and the writer. Chloroform was given and the patient came out of the operation in fairly good condition. Following the operation the uremic conditions were deepened, but gradually became less marked until the fourth week after the hysterectomy, when there ensued lobar pneumonia, with suppression of urine. At the present writing the kidneys are secreting 200 grains of urea in twenty-four hours and the patient is gradually recovering from the lobar pneumonia. Examination of the extirpated uterus demonstrated a submucous polypus which had undergone sarcomatous degeneration at the base. In addition there was a double pyosalpinx and pelvic abscess, from which a culture of streptococci was made. Microscopic examination of sections of the uterine wall including the growth established the diagnosis of round-cell sarcoma, which had not penetrated far into the uterine wall.

These three cases, briefly recorded, illustrate the importance of systematic examinations of the uterine scrapings as a means of diagnosis in gynecology.

1617 Indiana Avenue.

[2] While this paper was under preparation, the writer received the very instructive and interesting article on "The Importance of Systematic Microscopic examinations of Uterine Scrapings and of Excised Pieces as an Aid to Diagnosis," by Hunter Robb, M.D., of Cleveland, Ohio, reported in the American Journal of Medical Sciences. This report is based on Records of 100 cases, and strongly emphasizes the importance of such examinations.

THE ABDOMINAL TYPE OF RESPIRATION AS OFTEN EMPLOYED IN SINGING.

BY O. J. STEIN, M.D.

INSTRUCTOR IN RHINOLOGY AND LARYNGOLOGY, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.

CHICAGO.

My attention was directed to this subject by observing that among a certain class of singers who practiced the abdominal type of breathing, there existed a marked disproportion in development of the chest and abdomen. Not alone this, but in seeking for a causative factor for some deranged conditions of the generative organs my investigations brought me to the abnormal employment of abdominal respiration as used in their singing. As soon as I became cognizant of the fact that the over-indulgence in this form of breathing was to blame for the trouble in hand, I readily saw the irreparable amount of damage that may come to these organs of generation by following such a method; and I thereafter made it a special point of observation and inquiry in all cases of this character to observe the type of respiration employed and to inquire as to the method taught them in their singing. In one case I was told the singing teacher laid particular stress upon the forcible employment of the abdominal muscles in the expiratory act. This was done, he explains, to add force to the act and hence volume and power to the voice. And thus regardless of all consequences, ignoring one of the important elements of physics—that no two things can occupy the same space at the same time—he tells his pupils to force down these powerful abdominal muscles, displacing the contents of the abdomen, so as to press up on the diaphragm and thus add force to the act of expiration. Apparently there is but one object in view and that is to add strength and power to this expulsive act of respiration. But in selecting the abdominal type the teacher disregards all laws of physics, physiology and health, and as a result of exercising these muscles for the purpose indicated we are so liable to see, and in many cases where we do not see, they really exist unknown to us, the want of symmetry and proper development of the chest, the over-developed and protruding abdomen, and the train of symptoms resultant from a constant and forcible displacement of the contents of the abdomen. Like any other muscle or group of muscles under persistent exercise, there is bound to result a highly developed state of its fibers, and as a consequence we often

find in these cases a very perceptive protrusion of the abdomen; and in one case that I had under observation, the muscles were so developed that in placing my hands in the attitude of palpation upon them they felt like bands of iron, so firm and strong and contracting were they. It is then only too apparent with such powerful muscles acting synchronously, pressing down through their contractive action upon the underlying organs, that everything is displaced to a more or less extent, and that this constant displacement, and often too under great force, by its pushing and crowding, drags upon and stretches the natural lines of moorage that anchor the different organs in their proper and respective places. And hence on account of the peculiar position, suspended as they are in the very center of the pelvis, the generative organs are more easily and disastrously displaced. Like its sister evil, the tight corset and girdle constrictions, many of these generative disturbances may

Fig. 1.—Appearance as a result of abdominal breathing.

Fig. 2.—Same as figure 1, but to a less degree.

be attributed and directly traced to these displacing forces. Only in the factor under consideration I consider the evil a still greater one, in that by the alternating contracting and relaxing action of the muscles, there necessarily results an unstable position of location in the organs much at variance with the more natural and healthy conditions, which reciprocal successions putting the ligaments now taut, now slack, ends in such a stretched and useless condition that malposition is the only inevitable result. I am directing my remarks now more toward the uterus and its appendages, but what is true of these organs is also, but probably to a much less degree, true of other organs in the abdomen; and particularly here I may mention the stomach. Now just imagine in what an embarrassed position this so often abused organ is placed when the singer with her herculean-like belly muscles causes them to forcibly contract, pressing in upon all that lies underneath causing a general scattering, as it were, of everything within and crowding and cramming the much suffering stomach to adapt itself within a space not any too roomy for a chicken's gizzard.

In pursuing my investigation upon the lines of inquiry, I learn from most all of the singers interviewed that there exists a manifested degree of abhorrence to the prominence of motion assumed by the shoulders and bosom in the normal and physiological mode of breathing and hence I have been led to believe that the employment of "abdominal respiration," upon the principle that strength and force is added to the voice production, has been used more as a guise under which to parade a fad or a new method. That the natural type of breathing among women is the costal is an admitted physiologic fact and scarcely needs any substantiation in connection with this article. A reason for this form of breathing in the female sex may find an explanation in an anatomic condition, namely, the existence of the uterus and its suspended position allowing and providing for its

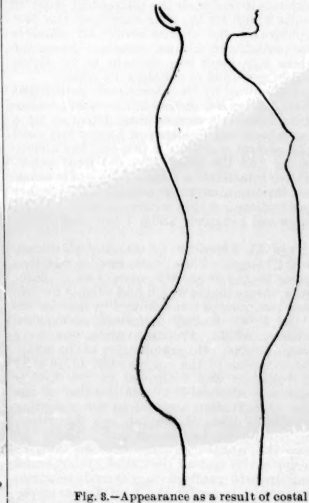


Fig. 3.—Appearance as a result of costal breathing.

child-bearing function. It has been claimed by some that the costal type of respiration in the female depends upon the constriction of the chest by corsets or other causes (Landois and Stirling, Text Book Human Physiology), but this again seems refuted by others maintaining that this type is quite distinct and characteristic, even in sleep when all constrictions are removed. Then, too, there exists in women a greater flexibility of the ribs, allowing the muscles of the chest to act more efficiently upon the ribs (Landois and Stirling, Text Book Human Physiology). In my mind the whole subject hinges upon the recognition that respiration consists of but *one* active movement and that is the inspiratory one. The act is a muscular one under the influence of the central nervous system. The muscles involved are the diaphragm, the two sets of elevators (levatores costarum longi et brevis), the saw-tooth muscles of the back (serratus posticus superior) and the intercostal (intercostales external, et intercartilag.) The stimu-

lus coming from the center of respiration in the medulla oblongata causes the muscles in question to contract. The diaphragm through its nerve, the phrenic, contracts and consequently on account of its dome shape descends, causing an increase in the vertical diameter of the chest. The levatores through their branches of the dorsal nerves, and the serratus through the cervical nerves, likewise contract and arising as they do from the spine as their fixed point and passing obliquely downward and forward to the ribs, they necessarily raise the ribs, which movement is of a rotary as well as elevatory nature. Thus the lateral and antero-posterior diameters of the chest are increased. In short, the chest is an air chamber; the muscles attached to its walls are endowed with the power of enlarging the cavity of the thorax so as to draw air through the windpipe into the lungs, which therefore become inflated. The lungs have not in themselves any ability to increase their capacity, but are merely blown out by force of the air which rushes into them according as the chest expands in order to prevent the formation of a vacuum (Holmes' Voice Physiology).

Now presuming we have in object an exaggerated form of inspiration as employed in singing, we set the accessory muscles of inspiration in operation. And these are the muscles of the hyoid bone, the sternum, upper ribs, collar bone and a few less important ones of the chest.

Now comes the second part of the respiratory act, which is non-muscular and hence purely passive. The cavity of the chest is diminished simply by the weight of the chest wall. It is the elastic recoil of the chest and lungs, which diminishes the cavity and by the relaxation of the diaphragm, which again resuming its dome-like shape presses up and against the lungs. But as in the exaggerated inspiration we have accessory muscles of expiration, in which the chest is squeezed, so to speak, by an extra effort. This extra effort lies in the muscles that depress the ribs, like the internal costals, the triangularis sterni, serratus posticus inferior and quadratus lumborum, and also by contraction of the abdominal muscles, which retaliate upon the diaphragm which had by its contraction and consequent descent pressed out the belly muscles. It is this fact that the abdominal muscles, being accessories to the expiratory act, are so often taken advantage of, and on account of the ready control one has over them and the power they contain, that their use is so shamefully abused. The mere fact of these muscles being accessories does not admit of their forcible use and hence abuse. One might say then that the levator ani should be forcibly used, for it is also an accessory muscle of expiration.

In following the drift of argument that I have I do do not wish to be interpreted in advocating so called clavicular breathing, a form of breathing accredited to many singers, wherein the shoulders are prominently elevated. It is a very pernicious habit of respiration and should always be discouraged. The very first point of counter argument heard from singers and teachers when confronted with the evil effects following the employment of the abdominal type of respiration is the ill appearance presented by one using clavicular respiration; thus at the very outset disregarding the great difference between costal breathing and shoulder breathing. In fact, elevating the shoulders has but little influence in dilating the chest, as they raise the ribs only to a comparatively small extent, because their power is mostly exerted over the upper ribs which have little freedom of motion and hence the effort is greater than the result warrants.

25 E. 47th St.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

(*Continued from page 498.*)

CHAPTER III.—AT THE UNIVERSITY.

Academical training; The German student; Rough students' life; Göttingen Woodmen union (Hainbund); The student in war; Number of those who study medicine; Lectures, Latin language, dictation; Gatherings, libraries; Professors, their rank and income; Misdemeanor of the doctor graduation, dissertation factories, our time; State examinations; Ceremonies, religious confusion at the graduation; Women doctors; Study of anatomy, public prejudice; Anatomical theater, scarcity of cadavers; Pathologic and surgical anatomy.

"Young people positively must learn Latin; I insist upon it. Moreover it must be reduced to the easiest and best rules for teaching it to young people. Whether they become merchants or turn to something else, it is always useful and the time will come when they will find it so." So ran a cabinet order of Frederick the Great, although this monarch knew Roman and Greek authors almost wholly through French translations. Latin was the soul of the *Gymnasia*, but the instruction in many of them was very poor and to little purpose. Monks, for the most part rude, ignorant and superstitious, did the teaching in the Catholic countries. In the Palatinate schools the Catechism of Kanisius was taught as the basis of religious instruction, and Latin from Alvari's Rudiments, and a few abridged authors. For history there was a text book, which related, on one page in the most absurd Latin, on the other in dreadful German, events according to the Jesuit point of view, with a multitude of fables. The monks early inculcated in the boys a hatred of heresy and innovation. The Lutheran and Reformed schools were even worse, since the lazy teachers there did not even understand Latin. Many gymnasia cultivated mathematics to the neglect of history, geography, physics and languages, and taught only a miserable monk's Latin. With this meagre instruction many young people went to the universities without the requisite preparation. A searching reform became necessary. Gessner brought in new life when he ingrafted the Greek language in the schools, and advanced the new principle, enthusiastically received, that not the stuff of the grammars but the spirit of antiquity is the essential thing. In general people were inclined to send boys to school as early as possible and they often finished the course at the age of 14. They then pursued philosophical studies, began medicine at 16, and finished at 19 or 20. A. von Haller became a student at 15, Mauchard at 16. Schlözer met at the Catholic universities boys of 16 who heard lectures on Institutes and Pandects, spoke Latin and were well versed in philosophy and mathematics. Schlözer's daughter Dorothea, at the instance of her father, was, in her eighteenth year, examined by the Philosophical Faculty in Göttingen and was made Doctor of Philosophy. Still there were always a large number of students of medicine who did not begin to study at a university

be ore 18 or 20. A few d[illegible] considerable preliminary studying before they turned to medicine. It is known of G. G. Richter that aside from his favorite study, Oriental languages, he attended the philosophical and philological lectures for a long time, and it was only after he had obtained his degree of Master of Philosphy that he began the study of medicine. Likewise A. von Haller went to Basel for over a year especially for the study of mathematics.

We are captivated by the picture of the *German student*. At the beginning of the eighteenth century he wore a three-cornered hat over long curled hair, a broad-breasted coat lavishly decorated with embroidery and buttons the size of a dollar and slashed to the elbows, black knee breeches, black stockings and buckled shoes, with a parade sword hanging at his side. The life and activity of the students were still sunk deep in the barbarity of the foregoing century. Any high devotion to science was almost wholly lacking in universities whose chairs were given to spiritless pedants and ignoramuses. No wonder then, in view of the laxity and weakness of the administration, that the beastly drinking bouts, fighting, duelling, harrying of townsmen and ribaldry were the order of the day. The student songs of that day were coarse and insipid and teemed with unredeemed vulgarity. With the most extravagant wantonness, rioting and gambling, there prevailed the darkest superstition among the students. We find the same crudity in the second half of the century in the so-called seats of learning (Musensitzen). Frederick Lankhardt, in his autobiography (1792–97) gives the following picture: "The tone of the students or Bursche at Giessen was quite like that at Jena, and this indeed because of the many expelled Jena students who came to Giessen. Whoever wished to be a good fellow went, at least in the evening, to one of the many beer kneipes—the Rhenish Maass of beer cost two kreutzers—drank till 10 or 11 o'clock and then moved on. It was considered pedantic to speak of literary subjects, so student affairs were discussed and generally indecent stories were related. I know very well that in Eberhardt's student kneipe, lecture on obscenities (Zotologie) were regularly held and there was a compendium on the subject in manuscript. Drinking bouts were permitted in Giessen, and we have held drinking bouts (kommersirt) four times on the street. Most of the students walked like swine. A jacket (Flausch) was a part of a student's dress Sundays and week days. He wore with it leather breeches and long riding boots. Fighting was very frequent and they fought in the public streets. The challenger went to the window of his adversary, rapped a few times on the wall with his sword and cried: "Pereat N. N., the puppy, the hog!" Then the challenged party appeared, the fight proceeded and at last the beadle came and stopped the disturbance, the brawlers went to prison and so the sport came to an end. Among the gross vulgarities which were the fashion at Giessen were the Generalstallung (the general's stabling) and the Wüste Gesicht (bad face). The former consisted of twenty or thirty students filling themselves completely with beer and going before some house where women lived, when, at a regular command, with a neigh such as horses give, made some indecent display. The Wüste Gesicht was a mask of horrible appearance, which was fastened to a bundle of rags on a long pole. With this mask the students went in the evening to a house where the people lived in the second story, and rang. When some one came to the window to ask who was there, they held up to him the ugly face, and the good people were frightened to death. The feverish desire to scribble full great notebooks did not bother the Giessen students. In every university I have found lusty scribblers, but never more than in Halle, where the students filled many quarto volumes with academic college wisdom. In other respects the tone of the Hallensers was very rude. In Jena every student had his so-called charmante, a common wench with whom he went about, so long as he was there, and whom at his departure he forsook for another. In Göttingen, on the contrary, the student sought entrance to the house of a gentleman and paid his court there. In general it stopped with courting and it had no further consequences than to empty the purse of the gallant. But many times things went much further and there followed living witnesses of an intimacy which just as often ensnared a knight's daughter as a pretty, buxom serving-maid." Letters about Jena (1793) relate that even in the seventies there was dueling in the market place on clear days. The Jenenser wore an overcoat, a jacket, leather breeches and a great laced hat. He possessed the extraordinary ability to pour down his throat a half a cask of beer; everyone who came near him he struck behind the ear and stood ready to settle the case upon the spot. His ideal of perfection was a consummate fighter, and the lowest creature a man who had no desire to riot every moment in the night and devote himself to dressing with a certain delicacy and elegance. The docents often vied with the students. The academic secret societies were in full bloom in the middle of the century. Growing out of the propensity of that time to form secret societies, the Moselbund, one of the oldest in Jena, was founded in 1746. Brawls between the different orders were not long in coming and led in Giessen in 1777 to bloody riots. Peter Frank is quite beside himself over the uncurbed excesses of the students, the wildness of whose life surpasses that of the lowest rabble. If in general the medical students participated less in these things, because of lack of money, yet they indulged in nonsense enough. The mania for dueling prevailed everywhere to such an extent that this professor (Frank) remarked that "yearly thousands(?) perished in this most disgraceful way. From early morning till late at night there was no end to the fighting and swaggering. All the Landsmann and other riotous societies owed their existence to the fencing-room. Whoever went to the university, on the very first day fell among these murderous bands, who thought it disgraceful to let a week pass without bloodshed." One exception to all this was the new University of Göttingen, where they had no Middle Age traditions and would not recognize the absurdities of student usage. A number of students lived there who formed the so-called Hainbund (Woodmen), in sharpest contrast to the above described rude student life, as the well-known letter of Voss to a friend described it: "Ah, you should have been here the 12th of September (1772). The two Müllers, Hahn, Hölty and I went in the evening to a neighboring village. The evening was clear and the moon bright. We gave ourselves up entirely to the contemplation of beautiful nature. We drank milk in a peasant's hut and then betook ourselves to the open field. Here we found a little clump of oaks and immediately it occurred to all of us to take the oath of friendship under those holy trees. We wreathed our hats with

oak-leaves, laid them under the tree, seized each other by the hands and danced around the encircled oak tree and called the moon and the stars to witness our bond and promised each other eternal friendship, etc." The Hainbund founded the Göttingen Musenalmanach, but was scattered when the bonds of association were broken.

From 1780 the academic conditions improved. The entrance of Karl August and Goethe at Jena had an influence for earnest scientific work and limited the barbarities. It was an event for the city when Schiller delivered his inaugural address as professor in May 1789, and he was given a serenade by the students, with loud *vivats*. The theater began to fascinate them and sometimes to throw them into real paroxysms of enthusiasm. Iffland reigned supreme. Once in Lauchstädt, when the curtain fell at the end of the play, one of the wildest students of Halle dashed up to another Hallenser, whom he scarcely knew, and with streaming tears swore he would never again touch a card. Poor students saved for a week in order to visit the theater in Lauchstädt once; then they ran back to Halle in the night, that they might be at the college the next morning. The student life became less rude when its administration instituted a stricter police supervision and more sharply opposed the misuse of arms. No Prussian students, except the nobles, were allowed to wear swords. And in Göttingen, where in 1763 the student was obliged to part with his favorite animal, the bulldog, and the university gave stipends to a number of hunters instead of the soldiers in order to keep peace, neither teacher nor student carried a weapon. There the surgeons were bound upon oath to report to the authorities the wounds of students as soon as they were bandaged. The students at Pavia and Padua wore swords when visiting as late as 1787. The Chancellor Boco took the swords from the English students and the French surrendered theirs to the rector.

With the war for independence came a new impulse into academic life. In 1813 lectures were suspended in Berlin, Breslau and Königsberg and almost all the students departed from Jena, Göttingen and Halle to Breslau. From Halle they went stealthily, in little groups, for the University was still under Westphalian jurisdiction. In Breslau they voluntarily entered the rank and file to defend the Fatherland. And in the gymnasia the oldest and stongest pupils donned the uniform and became the pride of their classes, envied by the younger boys. In the bloody battles for German freedom the student learned a better use for arms than to whet them on "stupid boys," heavy with drunkenness, in the beer rooms at home. After peace was declared, when the lecture rooms were filled again, the academic life was carried along with the great movement of the time. In Berlin there arose, as a new form of the old secret orders, the "Burschenschaft," and in Jena, then the center of the German universities, another such society was solemnly founded in 1815. The idea of sometime serving the Fatherland with honor has contributed not unworthily to curb the wild life of the universities. When in our day *la grande nation*, which is always marching at the front of civilization, loosened against us her *Turcos* and *Gums* in this great struggle to be or not to be, the German students were under arms. Two thousand seven hundred and forty-five grasped their swords in the summer of 1870, and 914 served as hospital attendants; 248 of them met their death. Further, 15 university teachers went to battle and 253 consecrated themselves to the service of the wounded; of these 4 fell.

Germany was rich in universities and in 1792 possessed over forty. Many of these have decayed with time; among others, Altdorf, Bamberg, Erfurt, Frankfort-on-the-Oder, Helmstadt, Ingelstadt, Mainz, Rinteln, Wittenberg. Concerning the *number of medical students*, Göttingen, where the majority always gathered, had in the years 1767–78 an average of 50 to 80 medical students, in the following ten years between 80 and 100, among 600 to 900 students. The thousand mark was reached there for the first time in 1816, when among 1,005 students 206 were in medicine; in 1866 there were 189 to 769. In Jena in 1768 there were 17 medical students; in 1773, 42; in 1785, 73; in 1792, 162; in 1866, 65. Marburg in 1793 had 56; in 1866, 32. In Vienna in 1723 25 studied medicine. This extraordinarily small number was in part due to the great number of prescribed holidays, which kept many young men from the Catholic universities. In 1795 there were only 24 students practicing in the Vienna clinics, where there were 300 but a few years later. Many German universities could not compete with those in foreign countries. In 1772, 364 students attended the medical lectures in Edinburgh; in 1787 there were 400; in Pavia in 1782 among 2,000 students 200 were in the medical department.[1]

The study of medicine was free. Every young man, whether he had an education or not, if he came from the apothecary or the barber shop, could, if he had means enough, attend the medical colleges. It was considered desirable for those studying medicine to understand Greek and Latin, so they could read Hippocrates in the original. And the modern languages should not be neglected; Conrad Sprengel even desired a knowledge of Arabic. Philosophy, history, belles lettres, and especially the mathematical sciences (pure mathematics, mechanics, physics, optics and hydraulics), were considered very valuable to steel the mind against vacillating theories. Finally, the medical student should be sufficiently informed in botany, mineralogy and zoölogy; in short there were few supplementary sciences which were not considered, by this one or that one, as absolutely necessary. That was an educational luxury before which the mind recoiled and which diverted the young men from the special line of study. For the rest the medical instruction was by no means in a position to satisfy these large pretensions. In the majority of the universities there was much left to be desired, as in the smaller states they were not sufficiently endowed to support the necessary number of teachers. At first Halle and Göttingen boasted only two professors, one for theoretical and one for practical medicine, but this number was soon increased. In 1750 Leipzig had five professors: in therapeutics, pathology, anatomy and surgery, physiology, and botany; in 1763 Heidelberg had four professors. In Vienna until 1775 there were only three professors; under Maria Theresa a fourth, for chemistry and botany, was added, and in 1780 under Joseph II. still another, for natural history. In very many of the universities there was a total lack of practical facilities. It was proposed

[1] In the winter semester, 1872–73 there were at 21 German universities, 1,620 teachers and 17,858 students; at 10 polytechnical schools, 300 teachers and 4,500 students.

therefore to make one large institution out of two small schools and wherever possible to establish it in a populous city.

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

BY EDMOND SOUCHON, M.D.
PROFESSOR OF ANATOMY AND CLINICAL SURGERY, TULANE UNIVERSITY, NEW ORLEANS, LA.

(Continued from page 501.)

SURGICAL DISEASES AND INJURIES OF THE PAROTID REGION.

Congenital absence of the parotid and atrophy of the gland are very rare. However, occasionally subjects are seen with a deep hollow between the ramus of the jaw and the mastoid process, showing the partial atrophy at least of the gland.

Congenital hypertrophies are not on record. Branchial fibrochondromata are sometimes found over this region. *Acquired atrophy* or destruction of the gland has been observed as the result of neuroses, injuries, congestions (mumps), inflammations and gangrene due to general fevers. *Acquired hypertrophies* are represented by the various kinds of swellings of the region. *Swellings* may be due to some forms of injuries or neuroses.

Injuries of the parotid region are rare; they are grave, on account of cicatricial disfigurements and injuries to the facial nerve and to Steno's duct. Punctured superficial wounds are of no consequence, nor are the deeper wounds unless the instrument be large and the great vessels be injured. Incised superficial wounds may injure the facial nerve and the duct and may be followed by paralysis; when large, the divided nerve and duct should be at once stitched. Incised deep wounds are most serious. The diagnosis of the penetration of the gland rests upon the escape of saliva. When the wound is narrow, the hemorrhage, and later the suppuration, prevent the diagnosis; if the pus is very liquid, it is probable the gland is seriously injured. To prevent fistulæ, stitch tightly and procure rest of jaw. Deep wounds are more serious, because of the presence of the temporomaxillary vein, which becomes the external jugular; also of the other deep vessels. The bleeding is profuse and sometimes terrific; it should be at once stopped by plugging; then a provisional loop ligature should be applied on the common carotid close to the bifurcation; the bleeding points should then be ligated. If this fails, it should be determined with care which vessels furnish the hemorrhage. If the external carotid, ligate it; if the internal carotid, ligate it separately or ligate the common carotid at the very bifurcation to prevent the return through the collateral circulation. If the jugular vein is injured, ligate it as high up as possible, at least above the facial and lingual, or ligate there. After the ligation or ligations have been done, the accidental wound should be packed tightly with bits of aseptic sponges to prevent hemorrhage by the distal end of the vessels; this plugging will usually accomplish this, but plugging should never be relied upon if the trunk has not been ligated; the hemorrhage is almost sure to recur, and often the patient thus loses so much blood that when the ligations are at last performed the patient still succumbs to hemorrhagic anemia. When the hemorrhages are unmistakably venous, the thorough systematic sponge plugging may suffice even in wounds of the internal jugular. *Contused and lacerated wounds* call for the same remarks, but it must be remembered that although the primary hemorrhage may not be copious, the secondary hemorrhages are most to be dreaded, and proper instruction in consequence must be given.

Gunshot wounds call for the same remarks, with the aggravation of the presence of the ball in the deeper structures, in the pharynx, in the bones or in the brain. *Poisoned wounds* present nothing peculiar.

Neuroses are represented by paralysis due to the injury of the facial or auriculo-temporal nerve by blows or operations in this region; or they may follow disease of the nerve or pressure upon it by products of inflammation or tumors. *Nervous hypertrophy of the parotid region* has been recorded; it is characterized by a rapid congestion of the gland, in a few minutes, with a constant desire to swallow; sometimes the two glands are affected at the same time; the cause seems to be a mental excitement. It is soon dispelled under proper antispasmodic remedies. Softenings and indurations present nothing special.

Hyperemia of the parotid is here represented by the disease called *mumps*. It is considered a specific infectious disease; it is contagious in schools; it is most serious in spring, in damp or cold weather; young male children are more commonly liable; sometimes it follows orchitis, but it is usually the reverse. Its pathology is obscure. The most remarkable symptoms are pain and swelling without redness or heat, softness of the part; no induration, no fluctuation; the pain is increased by biting, chewing, swallowing; there is little or no general reaction. The beginning is often sudden, also the termination; it sometimes removes suddenly to the testicles, ovaries or breasts. The duration is about ten days. Termination by resolution is the rule; it is altogether exceptional when suppuration takes place. The treatment consists of soothing liniments and keeping the parts warm. It may affect both sides and also the submaxillary gland; it is sometimes epidemic; it may be due to the localization of a microbic infection coming from the mouth, and following the mucous membrane of Steno's duct.

Adenitis or adeno-cellulitis of the lymphatic glands situated on the parotid gland is usually due to lesion of the scalp or face; the symptoms are not so severe, the motion of the jaw is not so painful. *Simple* and non-virulent *inflammation* of the parotid may be due to cold, traumatism, obliteration of Steno's duct by a calculus or to the presence of a calculus in the gland; to mumps, to goitre (parotid goitre), mercurial salivation, iodid of potassium or menstruation. The symptoms are those of ordinary localized cellulitis; the pain is usually great on account of the capsule.

Acute parotiditis is a comparatively rare disease. Its causes may be mumps (rare), a debilitated state of the system, an infectious disease (typhoid fever, sepsis); it may be complicated with ear, eye, tonsil or brain syphilis, but it is always very rare. A pathologic peculiarity is that the capsule of the gland prevents the pus from coming to the surface quickly.

The symptoms are those of deep cellulitis with the addition of the general symptoms due to the lesion which is the cause of the parotiditis. The mouth is closed; there is facial edema, earache; the speech and deglutition are painful. The course is usually rapid; it may be sthenic or asthenic; the pus forms rapidly,

almost at the very outset. The duration is about fifteen or twenty days. It terminates almost always by suppuration; the pus may open into the ear, pharynx, vessels, down in the neck and chest, in the space behind the pharynx; it may terminate by several successive abscesses; it may terminate also by gangrene. Its prognosis is most grave.

The treatment consists in keeping the mouth disinfected and in an early evacuation. In superficial abscesses be mindful of the course of the facial nerve and of Steno's duct; in deep suppurations, of the external carotid; in these cases follow Hilton's method or dilatation upon a guide. The complications are extensive dissection of pus, hemorrhages from ulceration of large vessels, venous thrombosis of facial, external and internal jugulars, of cavernous sinuses. Its sequelæ are cicatrices, fistulæ, paralysis of facial nerve, parotidean ephidrosis. The forms and varieties are: Deep parotiditis with abscess opening in the pharynx; purulent catarrhal inflammation of the gland; multiple abscess, lobular abscesses, having to be each opened separately; diffuse parotido-cellulitis.

Gangrene of the parotid region may follow injuries and inflammations; its usual sequels are salivary fistulæ or paralysis of the facial nerve. *Ulcers* of this region present nothing peculiar except that they may be followed by fistulæ.

Fistulæ of the parotid are not very common. The causes are abscesses, furuncles, carbuncles, gangrene, ulceration, operations and diseases due to calculi developed in Steno's duct or in the gland itself, or abscesses due to microbic infection, or from any other cause. The symptoms are an orifice through which the saliva runs, increasing during mastication and meals; it is increased by lemon, salt, vinegar; the orifice is usually single, is situated on the center of an ulcerated fungosity; it may be small or large; a probe penetrates more or less deeply. They sometimes cure spontaneously, but the prognosis is generally bad, because they are often difficult to cure. The treatment consists in local cauterization; if this is insufficient, in making a large hole in the region and closing the surface opening by a plastic operation; in persistent cases in destroying the parotid. The forms and varieties are, multiple capillary salivary fistulæ; they are also called ephidroses; they are caused by obliteration of the duct or traumatism or loss of substance; they are characterized by a sort of transudation through the skin of the region of the parotid of a transparent liquid which forms numerous drops at the time of meals.

Tumors of the parotid.—The lymphatic nodes while not situated in the parotid, may present almost all the tumors that develop in the salivary gland; they are called supraparotid tumors; they are usually movable, whereas the tumors developed in the parotid gland are not. Gaseous tumors of the parotid region do not exist. Liquid tumors, such as liquid hematoma, angioma, varix, present nothing peculiar; aneurysms are almost unknown; lymphangiomata of the parotid are congenital cysts and show after birth. Glandular angioma of the parotid is usually called glandular hypertrophy; it usually shows at birth; the skin is sometimes bluish; it has been observed only in children; perhaps they change with age. Salivary cysts due to the obliteration of a duct of the gland may be followed by fistulæ if treated by mere outside incision; it is best to try and open them from the inside of the mouth. Mucous, mucoid, serous and dermoid cysts are rare; they present nothing peculiar. Hydatid cysts have been reported. Purulent cysts or chronic abscesses are not common; tuberculous abscess of the parotid gland itself has never been observed (Duplay), but in the lymphatic glands they are common enough proportionately. Solid tumors of the parotid may be of all the varieties elsewhere found. Hematoma, sebaceous cysts, dermoid cysts and keloid present nothing peculiar. Simple adenomata or lymphadenomata of the parotid itself (due to simple hypertrophy) are very rare; those developed in the interlobular tissue are also rare; at first their growth is slow, then rapid and may be generalized; those developed in the lymphatic glands are common. Adenoma of Hodgkin's disease is very rare here. Strumous adenoma presents nothing peculiar. Tuberculous adenoma has never been observed in the parotid gland itself; in the lymphatic gland it is comparatively common, especially in children; it may at the outset simulate a tumor of the parotid gland and later a salivary cyst. Syphilitic adenoma of the parotid and gumma of the parotid are doubtful. Syphilitic adenoma of the lymphatics are common in syphilis. Adenoma of the gland is rare. Lipoma may be circumscribed or diffuse and infiltrate between the acini and the lobules of the gland.

Fibroma has been observed. Myxoma has been observed; it presents a gelatinous aspect. Myomata are very rare. Neuroma is doubtful. Chondroma forms 30 per cent. of the tumors of the region. Sarcoma, together with fibroma and cystoma, is about equally often present. Carcinomata represents about 45 per cent. of all the tumors of the parotid region; usually they are mixed tumors, in which the epithelial element has taken a great development; they may be secondary to similar tumors orginating in the pharynx or on the face; primary carcinoma is rare. Encephaloid develops at 41 on the average. Pulsatory encephaloids are very rare. Melanotic cancer is very rare; it usually involves the lymphatics. Scirrhus usually develops at 60 or 70. Mixed tumors are commonly those called simply chondromata; they usually remain limited to the parotid and do not invade the other regions; they may become very large so as to affect mastication; some have a rapid course, some a slow one; they may degenerate into sarcomata; they return rarely if operated upon in the first period; they return often if operated upon in the second period; generalization is very rare.

Tumors special to the parotid region are represented by the salivary calculi developed in the parotid; they are rare in the gland itself; they are said to be more frequent in males and in adults, also to be due to the inflammation of the duct-radicles which retard the flow of the saliva; also to changes in the chemic composition of the saliva. They usually cause pain, inflammation and an abscess, which upon opening, leaves a salivary fistula; using the probe through the opening or by penetrating the gland deeply with a needle, the calculus is felt; they may cause atrophy of the gland by sclerosis. They should be removed through an incision.

Surgical operations of the parotid region.—The possibility of extirpating the whole parotid has been much discussed, but it presents no practical or clinical importance; when the gland is diseased, the disease must be removed, whether it affects the whole gland or not. A partial disease of the gland with prolongations is as bad as, if not worse than, a disease affecting the

whole gland without such processes. The dissection should proceed from below and behind, upward and forward; the external carotid should be located and ligated or clamped, otherwise it might be cut several times; when the dissection leads into the deep parts, the patient's mouth should be opened, as this increases the size of the parotid cavity and renders the deep dissection easier by affording more room. A previous permanent ligation of the external carotid might be done, or provisional loop ligature applied to the bifurcation, so that if it should become necessary to ligate the internal carotid the same incision will answer for all purposes. In penetrating the region the dangerous structures are at the entrance and in front, to the inner side of the head and neck of the condyle; more deeply they are on the posterior wall. Some tumors of considerable size, and sometimes extending to the pharynx, are removed with little difficulty and little hemorrhage if the adhesions are loose; whereas adherent tumors, even of small size, are fraught with danger. The safe plan is to proceed as long as the adhesions with the surrounding structures are easily broken, and to stop as soon as they become too resistant, and as we approach the deep dangerous strutures which may be adherent to the tumor. Then the cleared part of the tumor should be cut off. It is a remarkable fact that often the stump left will, in growing again, become more superficial, and it is sometimes possible to remove the stump entirely by a second operation.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting, held at the Chicago Athletic Association Rooms, December 8, 1896.

Dr. GRADLE in the chair.

There were seventeen members in attendance.

Minutes of the last meeting were read and approved.

Dr. COLBURN discussed a method of operation for strabismus which he had used in a good many cases with satisfactory results. The method is as follows:

An incision is made over the tendon of the internal rectus and a partial tenotomy done. This tenotomy involves the whole tendon with the exception of a few upper and lower strands; then an incision is made with the scissors, external to the muscle, carried very deeply back toward the orbit, so as to divide the so-called check ligament. This ligament consists of a bundle of fibers from the orbital fascia, or capsule of Tenon, very firm in many cases, and extending from the orbital border to the sheath of muscle. If necessary, this procedure is combined with advancement of the external rectus.

The operation can also be performed as well in divergent strabismus, the check ligament existing at the outer side of the eyeball, as well as the inner. The point about the operation that was most insisted upon, was the necessity of section of these ligaments in a large number of cases.

Almost no ophthalmic literature mentions the existence of these ligaments, but they are described in several general anatomies. The steps of the operation were illustrated by a number of colored plates, and numerous cases were quoted.

Dr. GRADLE asked if any of the Society had noticed a peculiar condition in cases of squint of moderate degree, where on covering the squinting eye it was found that the squint became greater, but immediately returned to the original position when the squinting eye was uncovered.

Several members had noticed this condition, and Dr. Starkey spoke of a case in which the eye symptoms turned further in, and at other times rotated upward, downward or outward, there seeming to be no constant change.

Dr. COLEMAN spoke of a class of cases which did not have diplopia, but after operation, the squint not being completely corrected, the patient had crossed diplopia.

Dr. COLBURN referred to a large class of cases of recurrent heterophoria, where the whole amount was seemingly corrected by operation, but afterward returned in large part, and sometimes the same change took place after repeated operations, in one case five being done without permanent abolishment of the heterophoria.

Dr. GRADLE spoke of some experiments that he had made with the so-called rest prisms. He had found that it was possible by means of these prisms to develop in an eye having equilibrium of muscles a marked degree of any sort of heterophoria if the glasses were worn for an hour or so. He also had found, as was well known, that an apparent amount of heterophoria could be decidedly increased by means of glasses.

Drs. HOTZ and COLBURN did not agree with Dr. Gradle as to the effect of normal eyes. They had found quite the contrary, that in those cases where the rest prisms increased the amount of heterophoria, that the indication for operation were stronger, and that it was only in cases of latent heterophoria that the rest glasses caused any manifest lack of equilibrium.

Dr. COLEMAN said that a number of years ago he had prescribed prisms to a considerable extent, but that in recent years he had found that they were of little or no value in the treatment of asthenopic symptoms. As a rule, they will give temporary relief, but the symptoms almost invariably return, and for a long time he had found it best not to prescribe prisms at all.

Dr. HOTZ showed a modified form of bifocal lens for the use of presbyopic myopes. Instead of segment being cemented to the lower part of a fully corrected glass, the glass was ground to only partial correction and the segment giving full correction was cemented to the upper side of the lens. The segment was quite long, but did not extend as far as the center of the lens. He had found after a number of months' trial in his own case, that the relief from such a combination was very great. Ordinarily, he uses simply the lower segment, but if he wishes to look at a distance he looks through the upper segment, which gives him full correction.

Dr. PINCKARD, about a year ago, had made several experiments with the solid form of bifocal in a case of myopia in a presbyope, having the upper part of the lens ground in full correction and the lower part in the presbyopic correction. A number of lenses were ground, the segment varying in size, but the distortion from prismatic action at the junction of the two segments was so great that he was obliged to abandon the experiment in that case. It seems to him that any scheme of a small segment above would probably be applicable to cases of myopia of considerable degree.

Dr. STARKEY spoke of trouble he had had with lower segments in general, in having the segments decentered inward sufficiently, most of the opticians setting the segment in the center of the glass.

The Society adjourned by limitation.

C. P. PINCKARD, M.D., Secretary.

SELECTIONS.

Some Popular Errors about Medicine.—Dr. A. L. Benedict, in the *Cosmopolitan* for February, tries to show the general public some of the errors into which they have been led, or gone without any leading, and which more or less throw out of plumb the normal relations between physician and patient. He points out the false idea that prevails as to the possibility of assigning names to cases. Terms commonly understood, such as diphtheria, croup, quinsy, bronchitis, pneumonia, etc., are applicable in only about a third of all cases; perhaps another third is covered by purely technical expressions, while the remainder embraces cases so extremely simple or so complex that they must be described rather than named. The attempts of different physicians to translate into simple language the technicalities of medical science often lead to apparent contradictions and to much undeserved criticism. In chronic cases, and these are the very ones which are most apt to apply to a number of doctors, several organs are usually simultaneously involved. Different physicians will naturally locate the disease in one or another of these organs, and, in the attempt to explain the complex relations of one organ to another and to give the patient an understanding of a diseased organ, when he is ignorant of the action of that organ in health, it would be a surprising coincidence if any two doctors used expressions which the patient recognized as identical. Neither is the phy-

sician whose tongue is nimblest in finding a name always the one who best understands the disease. Dyspepsia, for example, is a high-sounding title and the one which is very satisfying to the average patient; but a physician who really understood the stomach would feel that he was scarcely nearer the mark in using this term than in saying that the patient was sick. Neurasthenia is another dainty diagnostic morsel; but the man who serves it is scarcely wiser than the one who says, "I don't know what to call your trouble, but you are simply worn out and nervously unstrung, and you need a rest."

Fevers usually divulge their nature little by little. The clinical thermometer makes it an easy matter to say whether a patient has fever or not; mere sensations of heat or "feverishness" are utterly unreliable; but the question immediately presents itself, What kind of fever? To this question, the honest physician at his first visit must usually reply "I do not know," unless he has been summoned after diagnostic symptoms have developed. Scarlet fever can not be positively diagnosed in less than twenty-four hours, measles in less than three days, typhoid fever in less than five or six days. The dislike to avow even a pardonable ignorance has led some really honest men to use expressions that are misleading and untruthful. Not very rarely, a physician is found who will state that a patient "is threatened with typhoid" but that he hopes "the disease will be broken up." Now, the patient is most emphatically not threatened with typhoid; he either has or has not that fever, but a positive decision can not be reached for several days. If, instead of typhoid, the disease happens to be a rather common and not very clearly understood "simple fever," the doctor gets the credit of having broken up a case of typhoid, a feat which all the great medical authorities of the world declare themselves unable to accomplish.

Few persons not thoroughly versed in medical art appreciate the true value of medicines. For example, a patient has passed successfully through an attack of bronchitis, having taken a certain prescription. The common opinion is that that prescription will be "good for" another attack of the same disease, either in the same or in another patient. As a matter of fact, most medicines are given without reference to the disease which is in progress, but to produce very limited physiologic changes or to control symptoms which may be common to many diseases. There is no disease which can always be appropriately treated by the same prescription, and only a very few in which any particular drug may be said to be specific. It will be readily understood that patients of different age, sex and temperament require very different dosage, but leaving this point aside, the prescription which was excellent for one case of bronchitis may be utterly worthless or even harmful in another, while it might be well adapted to certain cases of pneumonia or gastric catarrh or other conditions. Sometimes, the range of adaptability of a drug is ludicrous enough. Thus, a patient suffering from some forms of rheumatism and also from a corn, might be relieved of both troubles by using the same chemical, internally and externally, respectively. Yet other grades of rheumatism or other forms of inflammation of the extremities would fail to respond to analogous treatment. Again, a very efficient, though not ideal, treatment of erysipelas, was discovered by a careless nurse who applied externally a certain medicine which had long been used internally to support the strength of the patient. However, these are merely coincidences and, for the most part, the limitations of the usefulness of a drug are narrow enough. The same chemical may be obtained from widely different sources. Thus, oil of wintergreen, oil of sweet birch, willow bark or various artificially prepared drugs, all contain the same active ingredient and have an almost identical field of usefulness. So it may be that Dr. A.'s and Dr. B.'s prescription for a given case may read very differently, and yet represent essentially the same treatment.

The Toxic Basis of Neural Disease.—The *Boston Medical and Surgical Journal*, February 18, is among the first of our journals to properly notice the good work of Dr. Ira Van Gieson, of the Pathological Laboratory of the New York State Hospitals for the Insane, on the above subject. New York State has set for others a notable example in the establishment in New York City, under the competent direction of Dr. Van Gieson, a central pathological institute, whose function shall be to direct the work of the several laboratories throughout the State, and at the same time serve in itself as a center of research. There can be no doubt that the establishment of such a laboratory or system of laboratories is one of the significant steps of recent years toward the foundation of a scientific spirit regarding neurologic problems. After reverting to certain statements made in a previous address relating to the fact that he believes that certain factors are at hand for the creation of a new epoch in the evolution of the pathogenesis of nervous and mental diseases, he adds, "The *first* and most important of these factors is the precise and definite status which the anatomy of the nervous system attained through the investigations of the past decade by the Golgi methods; the establishment of the neuron theory in particular leads to a definite understanding of the pathology and physiology of the nervous system.

"A *second* great factor in this new epoch of neuro-pathology is the application of the modern doctrine of cytology and its technical methods of research to the investigation of the problems in nervous and mental diseases.

"A *third* factor is a realization of the absolute necessity of correlating the nervous system with other organs and tissues in the body in studying the operation of the fundamental and general somatic pathologic processes in the nervous system."

In these three statements lies the substance of our present point of view regarding the pathology of the nervous system. Certain points are of particular interest, and by no means sufficiently realized by the medical profession at large. The significance of the Golgi methods in the light they have thrown on the fundamental principle of anatomic structure received a quick recognition. The neuron theory needed only to be advanced to be accepted, so reasonable did its fundamental idea seem to be. As applied to pathology, however, it had been accorded a much more tardy recognition, on account, no doubt, of the deeply rooted conception that cells and fibers did not essentially belong together. Because of our failure to recognize in the neuron a unit of histologic structure, we have been unable to apply a true cellular pathology to our investigations of disease processes in the nervous system. When, however, it becomes a habit of thought to conceive of the highly differentiated nerve cell as we do of the simpler liver or kidney cell, it will be at once evident that we may apply to the nervous system those general pathologic principles which are everywhere else operative—a step certainly of much significance.

The second point upon which Van Gieson dwells is of almost equal importance, namely, the elaboration of new technical methods of research. It is entirely natural that the highly differentiated nerve cell should demand for its proper investigation staining methods of extreme refinement and delicacy. Until methods were found which could demonstrate minute structural alterations, it was hopeless to expect any material advance in our knowledge of the subtle anatomic changes underlying and associated with many marked clinical phenomena. This difficulty is now, in a measure at least, a thing of the past. We have come clearly to recognize that transient injuries to the nerve mechanisms leave their impress, as well as those of greater severity and longer continuance. We are now no longer deterred from histologic investigation, which a few years ago would, of necessity, have been fruitless owing to inadequate methods.

A matter of extreme general importance is Van Gieson's third factor, in which he speaks of the necessity of correlating the nervous system with other organs and tissues in studying its pathologic processes. We can not do better than quote his own words relative to this point:

"However obvious or trite," he says, "the statement of this third factor may appear, it is nevertheless true that much of the present obscurity in the pathogenesis of nervous, and especially of mental disease, is largely to be explained by the very

simple fact that the brain and the rest of the nervous system have been studied altogether too much as something apart from the rest of the body—as something beyond the jurisdiction of the laws of the great fundamental pathologic processes which operate on the whole organism."

Van Gieson insists that the nervous system can not be exempt from the workings of pathologic laws which are elsewhere operative, and that we must recognize this fact if we are to progress. Of necessity, the manifestation of such laws in the nervous system, as elsewhere, must depend upon the peculiar differentiation of the ultimate histologic elements, but because the nerve cell is highly differentiated affords no reason that it must be governed by pathologic laws peculiar to itself.

We owe Van Gieson a debt of gratitude for having clearly stated this broad point of view, and for his insistence upon the fact that the nervous system is, after all, merely a part of the organism as a whole, and therefore must be amenable to the same laws of disease and decay.

Presence of Tubercle Bacilli in Feces from a Non-Tuberculous Intestine.—Dr. R. B. Shaw, resident physician at the Royal Victoria Hospital, in the *Montreal Medical Journal*, January, reports a case of the above nature in a male patient, aged 54 years. The case presented the following conditions: the presence of tubercle bacilli in the fecal matter of a non-tuberculous intestine; a pernicious type of anemia incident to senile tuberculosis; the association of meningeal hemorrhage and grave secondary anemia; the existence, without symptoms, of a psammoma, and the presence of an auricular endocarditis.

The patient was a mechanic by trade and entered the medical wards of the Hospital June last, complaining of persistent diarrhea and general weakness. He was born in Scotland and came to Canada when 20 years of age. Of his past history he was unable to give a very satisfactory account and apart from some indefinite statements about his having had "fever and ague" while in Cuba some four or five years ago there was nothing of importance. Late in the fall of 1884, the patient had a severe chill lasting about five minutes and subsequently suffered so much from general weakness that he was obliged to give up work. Diarrhea supervened and a week later he entered the Montreal General Hospital, where he remained about one month and was then discharged feeling restored. Within a very short time afterward the diarrhea returned and has persisted ever since. So far as he knew no blood had ever been passed in the stools, which had been more or less liquid for the past six months. His appetite had been steadily failing but there was no vomiting. He had observed for the past six months that he was rapidly losing flesh but had never suffered from cough, though from time to time slight expectoration was present.

The patient is a much emaciated and markedly anemic-looking man of good intelligence. His skin has a somewhat subicteroid hue, but the sclerotics are of a bluish tinge. He sleeps well and has no pain, but his appetite is very poor and he is so weak that he is able to sit up in bed only a few minutes at a time. He has no cough, though from time to time he expectorates a small amount of greenish muco-purulent sputum. Temperature 97⅘ degrees; pulse 88; respirations 20.

Autopsy—The abdominal cavity: The panniculus is greatly atrophied and the fat is bright yellow. The muscles are thin and gelatinous looking. The abdominal cavity is dry. The intestines are collapsed, their serosa pale, smooth and glistening. The small intestines have here and there blue-black patches of discoloration opposite the mesentery. No tubercles are seen. The omentum is pale, broad, thin, non-adherent and irregularly disposed throughout. The liver descends to the costal margin. The diaphragm is at the fourth interspace at the right side and at the fifth rib on the left.

On removing the sternum, which appears normal, both lungs retract. The right is gathered up at the vertebral column in its upper half, where it is adherent behind and at the apex. There it is puckered very much. Both pleural cavities are dry. The left lung weighs 325 grams; there are slight apical adhesions and much anthracosis. The lung is fairly crepitant in general, with a few nodules of consolidation here and there, and on the surface there are some pseudo-tubercles. The apex is puckered with a thickened pleura, and there is a small caseous and fibroid mass. Centrally in the upper lobe are isolated tubercles, broncho-pneumonic areas, with purulent bronchitis, all well localized. There is a slight marginal emphysema. The lower lobe is anemic and dry, but otherwise normal. The bronchi contain slight muco pus. The vessels are free. The peribronchial glands are pigmented and calcified. The right lung is much contracted and puckered at the apex, where it is alternately solid and emphysematous. The upper lobe on section has slight cavitation, with smooth walls and a few caseous flocculi. Around this are areas of tuberculous pneumonia with isolated tubercles and pus cavities. In the upper half of the lower lobe there is a small area of simple pneumonia, and near it a patch of tubercular pneumonia as well, each of the size of a filbert. At the lowest part is also another patch of simple pneumonia. The bronchi are filled with thick muco-pus.

The cerebral convolutions are of normal size. There is much cerebro spinal fluid. The ventricles and substances of the brain and cerebellum are normal. Superiorly in front of the vermis cerebelli, and apparently attached to the pia, is a small bean-sized oval tumor, brownish gray in color, and varying in firmness, in some parts being fairly soft, in others calcified.

The retina of the right eye presents several recent hemorrhages.

The bone marrow of the femur is very red, looking like red jelly. There is very little evidence of fat. Cultures taken from the heart blood and pericardial fluid gave growths of the diplococcus lanceolatus; from the liver and left lung, staphylococcus pyogenes aureus and diplococcus lanceolatus. The spleen pulp remained sterile.

Remarks.—As will be seen from the above case report, the patient was suffering from advanced senile tuberculosis, and yet the subjective symptoms were comparatively slight, a condition which indeed seems to be by no means in the tubercular processes of the aged. In the present instance, persistent diarrhea and the grave anemia had rendered the physical condition so weak as to give the pulmonary symptoms far less prominence than might be expected under other conditions and in a younger subject. The presence of a blood condition, which is indistinguishable from that of pernicious anemia, is one which has long been recognized as a possible occurrence, though the association with retinal and meningeal hemorrhages is of more than usual interest. Hemorrhages into the meninges, so far as the literature indicates, seem to be particularly rare under such conditions.

It may, perhaps, be argued by some that the relative proportions of hemoglobin and corpuscles is not such as to warrant the application of the term pernicious to the type of the anemia, and yet Eichhort distinctly refused to acknowledge that in pernicious anemia there is necessarily a relative increase in the amount of hemoglobin. The most interesting feature perhaps, however, in the present case is the occurrence of tubercle bacilli in the feces, when no anatomic lesion in the intestines, suggestive of tuberculosis, could be found. The explanation is, however, obvious, the patient having swallowed the sputum which was maintained in such a condition as to render examination for tubercle bacilli a comparatively easy matter. The lesions found in the intestines presented absolutely no evidence of tuberculosis, the pigmented scars being in all probability merely old typhoidal ulcers. The persistent diarrhea was obviously associated with the chronic colitis. The cerebral tumor present, while close to important structures, had evidently not attained sufficient size to present characteristic symptoms.

Medical Treatment of Cancer of the Stomach.—Much can be accomplished in relieving cases of this kind in which the physician is too apt to consider himself impotent. A suitable diet is of great assistance, A. Robin asserts in the *Bulletin gén. de Thérap.*, Dec. 13, 1896. It should include lean meat, tender fowls, gelatins, peptones and meat powders, to which can be added green and nitrogenous vegetables. All easily fermenting substances, such as bread, cheese, cabbage, kefir and sugar, should be strictly avoided and the stomach regarded merely as a passageway for the food, which is not digested at all until it reaches the intestines. Albumin and milk is usually digested with difficulty, and the latter is only indicated to increase the appetite, taken for a short while occasionally, in hematomesis and in incoércible vomiting. Three meals a day are enough, as the digestion is slow. The medical treatment is of course only

palliative. To increase the appetite give: 1. Condurango, taken as a tonic; 15 grams cortex condurango alb. are boiled down in water from 250 grams to 150, filtered and sweetened with syrup; a tablespoonful of this is taken fifteen minutes before each meal. 2. Strychnin (tinct. nuc. vom., tinct. fab. St. Ignat.). 3. Theriaca wine. 4. One powder ten minutes before each meal as follows: Ammon. chlorat. 0.15; natrii. bicarb. 0.26; pulv. Dover, 0.10. To assist digestion, have the patient sip a glass of a solution of 1.66 hydrochloric acid in 1,000 grams of water at the close of the meal, and during it take a powder: Pepsin, 0.50; maltin and pancreatin, aa 0.10. To diminish the amount of fermentations, prescribe sulf. sublim. or præcip. 0.15 to 0.20, or sulf. iodat. 0.25 to 0.50 in a powder at the end of each meal, or during the meal a large tablespoonful of a 1 in 300 solution of fluorammonium. To arrest vomiting, prescribe: 1.5 to 7 drops of the following solution, five to ten minutes before eating: Picrotoxin and morph. mur. aa 0.05; atropin sulf. 0.01; aq. lauroceras. 10.0. 2. A teaspoonful of a cocain solution (0.15 in 150 water), a teaspoonful chloroform water or aq. menth. 3. A vesicans over the stomach. 4. A suppository on waking in the morning made of pulv. opii. 0.10; pulv. fol. bellad. 0.02; butyr. cacao q. s. Hemorrhages can be combatted with ergot injections in severe cases, and in less severe, a tablespoonful of the following solution: Ergotin Bonjean, 4.0; acid gallic. 0.50; syr. terebinth. 30.0; aq. til. 120.0. Or, acid tannic 0.60; opii pur. 0.15; sacch. alb. 1.0; M. f. pulv. div. in dos. vi. One powder every four hours. To relieve the pains: For merely sensitiveness in the gastric region, apply locally, empl. diachyl. empl. theria. aa 5 parts; extr. bellad., conii, hyoscyam. aa 1 part; ammon. acetic. 2 parts. For severer pains prescribe one to four teaspoonfuls daily of the following: Ka. bromat. 6.0; morph. muriat. 0.50; aq. laurocer. 10.0; syr. æther 30.0; aq. tiliæ. 120.0. For very violent pain, morphin injections loco dolenti. In pyrosis, prescribe magn. decarb. 0.60; opii pur. 0.02; bismuth subnitr. 0.20; natr. bicarb. 0.75. M. f. pulv. tal. dos. no. xx. For constipation order one of the following pills to be taken every evening before retiring: Aloes 2.0; resin., jalap scammon, turpeth veget. aa 1.0; extr. bellad., hyoscyam. aa 0.15; sap. amygdal. q. s. M. f. pill. no. xxv. Treatment of diarrhea: Electuar. diascordii, bismuth. subnitr. aa 4.0; f. boli no. xx. One every two hours. Or, in case of violent diarrhea, a pill every six hours made as follows: Cal., pulv. ipecac and extr. opii, aa 0.01. The cachexia is best combatted by the administration of glycerin phosphates per os or subcutaneously; 5 to 6 grams of a solution of natr. glycerino-phosphoric. 0.20 to 20 water, injected each day. Robin has treated thirty-nine patients in this way and nineteen are still living; seven have gained in weight, among them patients from 50 to 72 years of age, who gained one to two kg. in the course of two to five weeks.

PRACTICAL NOTES.

Percussion of the Vertebral Column.—Bechtereff draws attention to the diagnostic importance of percussion of the sacral region in some cases, as shown by the following instance: A patient was admitted under his care with symptoms of compression of the cauda equina. There was plantar and perineal anesthesia, spontaneous pain in the joints, etc., pain on percussion of the sacral region and the sphincters were affected. The history was that the patient had suffered from a severe contusion in the lumbar region in falling from a horse eight months previously and for the last six months the symptoms had been gradually increasing, till at the time the case came under observation there was considerable hectica. On account of the grave condition of the patient and his severe suffering it was decided to perform laminectomy. This showed considerable caries of the sacrum with caseating material compressing the cauda. After the operation the anesthesia and pain disappeared, but the condition of the patient prevented his ultimate recovery. The postmortem examination showed tuberculosis of the sacrum, suppurative prostatitis and tuberculous pyelitis. During life percussion of the sacral region gave a marked dull note, while in the healthy condition percussion of the triangular area which has for its base the upper part of the sacrum and for its apex the coccyx, should give a slightly resonant note. In the case just quoted the dulness corresponded exactly with the tuberculous mass which was found postmortem.—*Gazzetta degli Ospedali di Milano.*

To Differentiate Appendicitis from Acute Catarrhal Salpingitis.—Vineberg notes that the pains are more violent in appendicitis but more strictly localized, without radiating pains, while in catarrhal salpingitis, especially if the ovaries share in the inflammation of the tubes, the pains radiate toward the thigh. The alarming symptoms also show a noticeable remission toward the third or fourth day, which is a useful point in deciding dubious cases, as the alarming symptoms in appendicitis may persist and increase in intensity. If differentiation is impossible, the patient should be examined in narcosis. The treatment of appendicitis should be prompt operation, while in salpingitis a waiting policy should be preferred, as it often heals spontaneously without the necessity of an operation.—*Gaz. d. Osp. e d. Clin.* February 11.

Tardy Traumatic Strictures of the Urethra.—Professor Bazy describes a case and quotes one other on record, in which the symptoms of stricture were preceded by fracture of the pubis forty and fifteen years previously. As the retention of urine was not complete, the idea of prostatism was rendered less probable, and in exploring the urethra the bulb could not be felt through the perineum, but only through the rectum. He considers this fact a valuable means to differentiate spasm of the membranous portion from stricture located in the remotest part of the perineum, and thus close to the membranous portion. In his case the bladder was two finger-breadths above the umbilicus, prominent and painful. With a No. 23 blade, he sectioned the stricture which seemed as hard as any gonorrheal or other premembranous stricture, and the section was absolutely bloodless. Evidently a slow process of sclerosis had terminated in the production of a stricture. The treatment was successful.—*Presse Méd.*, February 13.

Connection Between Lead Poisoning and Gout.—The *Semaine Méd.* of February 13 contains a long study of this subject, showing beyond a doubt the intimate connection between gout and long-continued lead poisoning. The special characteristics of this form of gout are that the lead has produced pallor, anemia and emaciation, before the gout appears, while in other gouty subjects there is usually the appearance of good living and a tendency to obesity. In other respects the disease manifests itself in about the same way, and is treated alike in both cases, as what is good for gout also serves to eliminate the lead from the system. Hot and vapor baths stimulate nutrition and favor the elimination of the poisons, but sulphur baths are contra-indicated, as they are injurious in gout, increasing the formation of uric acid, as Bouchard has shown, although beneficial in saturnism. For internal medication, potassium or sodium iodid is indicated, in moderate doses, if the condition of the digestive apparatus allows their use. They favor the elimination of the lead through the kidneys, either by combining with it to form lead iodid, soluble in alkalin liquids, with a tendency to combine with the alkalin iodids and form a double salt, still more easily dyalisable, or by promoting disassimilation, which is the end sought in administering them in gout. Anemia requires a tonic and invigorating treatment, but it must not be exaggerated. The state of the kidneys must be carefully watched, and if nephritis is discovered, it should receive the usual treatment, as there are no special indications

for this variety of renal atrophy. The prognosis depends upon the severity of the saturnism, and whether it is combined with a hereditary tendency to gout, when it becomes much more grave. Plumbers, painters, printers, machinists and all who handle lead are exposed to it, but hearty eating predisposes to it.

Direct Diagnosis of Hernia of the Diaphragm.—It is so difficult to diagnose hernia of the diaphragm, that only 7 out of 266 cases reviewed by Lachner were diagnosed *intra vitam*. Prof. E. Maragliano has rendered it much easier by his application of the Lieberstein method of insufflation of the intestines to this purpose. He describes a case of hernia of the diaphragm, preceded by a traumatism two months before, which had evidently weakened the diaphragm. An attack of influenza caused severe coughing and the hernia suddenly occurred with its attendant phenomena. After differential diagnosis, certainty was attained by insufflating the intestines rhythmically with a pump *per rectum*. The insufflated gas did not produce any increase in the endo-abdominal pressure nor upward displacement of the thorax, but the left thorax increased a centimeter in volume, and simultaneously with each insufflation a sound was heard in the fifth intercostal space, while at the back, the hypophonetic area was smaller and higher. Auscultation also showed a murmur at a certain point in the left thorax. Further certainty was obtained by introducing an aspirating needle into the left thorax, connected with a syringe filled with a liquid, when the insufflated gas could be heard bubbling up in the liquid. A third test was made with liquid introduced with an ordinary syringe into the intestines, when an area of dulness was noticed in the left thorax, where it had been clear before. These tests produced such dyspnea in the patient that they were arrested as soon as the result was observed, but they were continued at length on animals, and the experiences confirmed. M. advises prompt surgical intervention in these cases, although many instances have been known in which the hernia produced no inconveniences, and was only discovered at the necropsy. But the danger of strangulation is always imminent, and he therefore recommends an operation.—*Gaz. degli Osp. e delle Clin.*, February 15.

Hemoglobinuria in Malaria.—Prof. G. Baccelli classifies the cases of hemoglobinuria accompanying malarial attacks into 1, those in which the hemoglobinuria is caused by the malarial infection and is cured, with the malaria, by the administration of quinin, and 2, those in which the hemoglobinuria is independent of the malarial infection and may be caused by the quinin administered. He ascribes it in these cases to an individual idiosyncrasy and states that clinical experience has shown that hemoglobinuria can be caused by the unnecessary administration of quinin, viz., without simultaneous malaria. These statements are based on his own, Tomaselli's and Murri's experiences, which he does not attempt to explain, remarking that hypotheses live but a day, while carefully observed clinical experiences last and are the constant source of the discovery of new truths. He adds that hemoglobinuria unchecked leads to hemodyscrasia, and always requires special treatment, whether it accompanies as a satellite the febrile process of malarial infection, of which it is a pernicious symptom, or whether it complicates a mild attack, originating independently of the infective cause, or whether it follows malaria, after a shorter or longer interval, appearing spontaneously or induced by even the smallest doses of quinin. Baccelli has found useful the administration of ferric persulphate, combined with inhalations of oxygen, and a strict removal of all the causes that, beside malaria, have been found to possess a tendency to produce hemoglobinuric phenomena. When the severity of the malarial attack requires intervention with quinin, he does not hesitate to use it, even although he may have well founded fears that the hemoglobinuric phenomena of the fever may be increased by it. He has been conducting a series of experiments, administering quinin to healthy persons, to persons suffering with the various forms of malaria and with other diseases, and analyzing the quinin as it was eliminated in the urine. He has found that the quinin thus eliminated, while retaining its bitter identity, has lost its crystallizing faculty more or less completely and the shape of the crystals is noticeably different from that of the original crystals. This demostrates that "the quinin has certainly lost something in its journey through the organism, but what? Can the action of quinin be of an electro-chemical nature? Mystery!" His experiments in administering this quinin derived from the urine to other patients with malaria, will be watched with interest.—*Gaz. degli Osp. e delle Clin.*, February 14.

Dual Infection in Diphtherial Cases and their Treatment by Two Serums.—Dr. C. C. Fite, in the *North Carolina Medical Journal*, January, advocates the use of both the anti-diphtheritic and the anti-streptococcic serum in cases of mixed infection. He says: "Marmorek and others have used anti-streptococcic serum in cases of diphtheria showing the streptococcus as well as the Klebs-Loeffler bacillus, also in scarlet fever, puerperal fever, general septicemias, infective tonsillitis, erysipelas and other diseases, whether due to, or complicated by, the appearance of the streptococcus pyogenes, and it seems as if it will prove of great value in other cases, perhaps in multiple abscess and in broncho-pneumonia, or, in fact, wherever the streptococcus is found as above stated." Dr. Henry Dwight Chapin has been giving some attention to its use in the two diseases last named. In reference to its use in diphtheria, I am firmly convinced that it is indicated in all cases where the microscope shows the streptococcus, and we almost invariably find it in cases which do not yield to the anti-diphtheritic serum and where we see a zone of inflammatory action extending beyond the area occupied by the true diphtheritic membrane. Therefore, if a case does not yield promptly to the anti-diphtheritic serum, we should, I believe, use the anti-streptococcic serum, without waiting for the report from the bacteriologist. The method of producing the anti-streptococcic serum is in the main a similar process to that used in the production of the anti-diphtheritic serum, or by injecting virulent cultures of the germs instead of the toxin. I am indebted to Dr. Charles T. McClintock of Ann Arbor for advice in regard to this matter. Dr. McClintock writes as follows: "As regards the difference in methods for producing the anti-diphtheritic and anti-streptococcic serum, I may say in general that the streptococcus, like a number of other germs, does not readily give off its toxin to the surrounding liquid. If you want to get the toxic properties of the germ, you must take its own protoplasm. On this account we are compelled to use the germs themselves, in order to successfully immunize an animal. The filtered toxins are not very powerful. This is the essential difference between the two materials. In the case of the streptococcus we use a living virulent germ in bouillon culture." There has been a great deal of good work done quite recently in this investigation of the anti streptococcic serum, and I feel confident that we are near a solution of the problem. The New York Board of Health is having it carefully studied in the Willard Parker Hospital, and the great reputation and well-known ability of the scientific corps of this board and of the gentlemen composing the staff of the hospital is a sufficient guarantee that the work will be well done. The profession of this country owes much to Drs. Biggs, Park and Prudden.

Fat as a Factor in Hernia.—It is known that emaciation has a tendency to produce hernia, but J. Lucas-Championnière asserts that fat is still more important as a factor, and that it plays a preponderant role in the evolution of hernia and also in the eventrations that follow radical operations. He empha-

sizes the fact that fat at the temperature of the body is not a solid but a fluid, and does not act like a stopper when an opening presents itself as it would if it were cold, but flows through it dragging other tissues with it, and tends to enlarge it. It also renders everything slippery, which favors the easy displacement of the viscera. Accumulations of fat also cause such pressure that the viscera are forced out of any chance opening. It also renders the tissues so friable that a radical operation has little chance of permanent success, and eventration is almost inevitable. For these and other reasons, presented in the *Journal de Méd. et de Chir. Pratiques* for Sept. 10, 1896, he urges the importance of seeking for traces of impending hernia in persons either young or old, who are acquiring obesity at a rapid rate so that they can be treated at an early stage, and also emphasizes the necessity of reducing the obesity. Even in inoperable cases, he has rendered life endurable by reducing the obesity, which combined with the inconveniences of the hernia made life a burden. The obesity should also be carefully reduced as a preliminary to a radical operation. He describes one obese case in which three months of preparatory treatment transformed the patient, until she was able to undergo a two-hour operation that restored her to complete health. The treatment in this case was, decrease in the amount of liquids taken, especially with the meals, a mixed diet, excluding nitrogenous substances almost completely, regular exercises and massage (massage of the bowels alone excepted). The medication included the administration of Santenay lithiated water, as much as three glasses a day, small interrupted doses of potassium iodid, and the administration of thyroiodin, most carefully watched. He considers regular exercise of the utmost importance in preventing hernia and as post-operative treatment, avoiding merely those gymnastics that suspend the body from the arms, and high leaps. Exercise is especially indispensable after severe abdominal operations, when the long repose in bed and the generous diet predispose to accumulations of fat. Regular exercise is not productive of hernia which are due to sudden violent shocks, or extreme efforts in defecation or coughing. He warns against an excessive meat diet and the use of alcohol in tonics or any form, as fat-producing. His experience of hernias has been extensive, as in 1894 he published a report of 275 radical operations. He concludes his vigorous denunciation of fat as a cause of hernia, with the remark that the sole advantage of fat in the matter of hernia is that it makes the wearing of a truss or bandage more endurable. His method of administering the potassium iodid is 25 centigrams a day in an aqueous solution, for two months, and resumed again after suspending it for two months more.

Ambulatory Lobar Pneumonia.—Dr. Gordon Campbell reports in the *Montreal Medical Journal*, January, a fatal case of this rarely observed affection. In hospital practice, where the great bulk of patients come from the poorer classes, it is not unusual to meet with acute pleurisy with effusion in the out-patient department. Several times I have been consulted for "shortness of breath and slight cough" of a few days' duration and found one pleural cavity almost completely filled with fluid. Pneumonia, or at least that form which sets in abruptly with a severe chill, met with during adult life is extremely rarely encountered in an out-patient hospital practice. The following are briefly the particulars of the case:

N. M., aged 49, a wood carver by trade, came to the clinic of the Montreal General Hospital on October 23, complaining of cough with slight expectoration and general malaise. Inquiry into the history of the disease revealed the fact that it had been induced by a severe wetting which he got on October 18. On the morning of the 19th he rose as usual at 4 A.M., but shortly after he had a severe chill lasting one hour and followed by pain in the side. During the day he took to bed, and at night cough and expectoration set in. During the 20th he remained in bed, but on the following day got up and sat about the house, not feeling quite able to go to work. On the 23d, feeling that he was not improving, he came to the hospital, a distance of over a mile from his home, and walked a part of the way. The personal and family history contained nothing of interest. He had been a hard drinker in his early manhood, but had been temperate for a number of years. On examination the temperature was found to be 101.5 degrees, the pulse 120. The right lung showed dulness from the spine of the scapula down, and at the side and front, corresponding very closely with the lower lobe. Over the dull area there was intense dry, blowing breathing and bronchophony. The vocal fremitus was slightly if any increased. A diagnosis of acute lobar pneumonia was made and the patient advised to remain in the hospital. To this, however, he demurred, not feeling, as he said, that he was "ill enough for it." After the grave nature of the disease was explained to him, he consented to be admitted, but insisted on going home first, which he did. The same afternoon he was admitted to the hospital. The temperature shortly after admission rose to 103 degrees, and remained between that and 101 degrees until death occurred on the tenth day of the disease. The expectoration was rusty, viscid, and contained pneumococci. The urine contained no albumin. On the 26th, two days before death, an area of consolidation was detected at the base of the left lung. The autopsy revealed acute lobar pneumonia, total gray hepatization of the right lung with commencing red hepatization of the left lung; acute bronchitis; chronic right and acute plastic left pleuritis; old apical tuberculosis; spleen large and firm; "hog's back" kidney with mixed nephritis and some fatty degeneration; slight cirrhosis of the liver; very marked dilatation and hypertrophy of the heart; polypoid white thrombus of the right ventricle and slight pulmonary embolism.

Asepsis and Anæsthesia in Urethral Surgery.—Dr. John A. Wyeth, in the *New England Medical Monthly*, January, treats of the modern technic of urethral surgery, noting that two important branches of the subject are worthy of closer attention than they commonly receive. The first and most important is urethral asepsis. A urethra which is about to be incised should be made sterile, if this is possible, and the urine of such a patient should always be sterilized at least twenty-four hours before the operation, and should be kept sterile during the time of treatment. We recognize the fact that the so-called "urethral fever" is a form of septic infection. The administration of twenty drops of a mixture of 1 drachm of salol and 2 drachms of oil of gaultheria, three or four times a day, will sterilize the urine within twenty-four hours. "It is also claimed that the administration of boracic acid, 5 grains four or five times a day, will effect the same result, but I have used the first formula with such satisfaction that I have never tried the boracic acid. We are indebted to the late Prof. E. R. Palmer of Louisville, Ky., for popularizing this important point in treatment. In addition to this, the urethra should be irrigated with permanganate of potash, 1-3000 for five minutes before the operation, or it should be thoroughly 'ballooned' with this antiseptic solution by using the ordinary conical syringe introduced at the meatus, and the canal thoroughly distended with the fluid. This should be repeated three or four times, and a sufficient pressure employed to overcome the resistance of the cut-off muscle, in this way reaching the entire canal. The second point is the question of anesthesia. The vast majority of all strictures of the urethra can be treated practically without pain with cocain anesthesia. From the meatus to the cut-off muscle, the urethra can be anesthetized by using from 1 to 3 drachms of a 2 or 4 per cent. solution. I give varying quantities and strengths of solution, because no given prescription would fit every case. It is my rule to study carefully the susceptibility of every new patient to this agent, and disregard of this rule has given the unfortunate results

that now and then find their way into the journals. When the entire urethra is injected, 1 drachm of a 2 per cent. solution should first be employed, and the degree of susceptibility of the patient, as well as the anesthetic effect produced, can be ascertained in five or ten minutes. If the anesthesia is incomplete and the patient shows no susceptibility to the drug, another drachm of the same or a stronger solution may be injected. It is also very important to remember that a patient is much more susceptible to the absorption of cocain when it is employed for the introduction of sounds for the first few times after, than at the time of the operation, for the simple reason that an incision, more or less extensive, has been made, which incision is covered with granulation tissue, rich in capillaries and ready and capable of absorbing under pressure a considerable quantity of cocain. Anesthesia of the membranous portion of the urethra may be obtained by carrying the Keyes-Ultzman syringe point down to the cut-off muscle, pashing it slightly within, and injecting 10 to 15 minims of a 4 per cent. solution. Anesthesia beyond the cut-off muscle is practically impossible, for the reason that the urine is in contact with this part of the urethra and so dilutes the cocain as to make it practically inefficacious. In meatotomy a few crystals applied just within the meatus or 10 minims of a 6 per cent. solution injected, limiting the application by digital closure of the canal one inch behind the opening, will effect complete anesthesia in division of the meatus or of an organic stricture here."

Prevention of Hemorrhage in Operations on the Liver.—A couple of Russian surgeons, Kousnetzoff and Pensky, have been experimenting with a view to find a process that would enable the liver to be resected without danger of hemorrhage. They now announce in the December *Revue de Chir.* that they have succeeded experimentally and in attempts on cadavers, and prophesy that ablation of large tumors and resection of part of the hepatic parenchyma will soon enter into current surgical practice. They find that ligature of the mass of the liver, slowly and firmly drawn tight, closes the lumen of the vessels, and thus prevents hemorrhage. After chloroform the peritoneum is opened and the lobe of the liver drawn out through the wound. A row of ligatures is then made through the liver, with a blunt needle and a double silk thread, the entire length of the piece to be removed. A sharp needle would injure the vessels and produce hemorrhage, possibly. The needle is pushed into the mass of the liver and drawn out the other side. It is thus passed through the substance of the liver several times, a few centimeters apart. The holes made by the needles each contain therefore two threads, the ends extending out above and below. The nearest threads in the different holes are then tied together; one thread in a hole thus acts on the hepatic substance to the right of the hole, and the other to the left. When these ligatures are drawn tight, the piece to be resected in front or back of them is then removed. If the ligatures have not been drawn tight enough, some vessels will bleed, when they must be separated and pulled up out of the parenchyma with a pair of Péan forceps and tied with a silk thread, or the surrounding tissue compressed with an intervening ligature. Compresses of gauze should be applied to control hemorrhage of the parenchyma. In secondary hemorrhage the bleeding surface may be thermocauterized after the row of ligatures has been made, but this is unsatisfactory and usually the vessels have to be tied finally. But hemorrhage rarely occurs if the ligatures through the hepatic mass have been drawn absolutely tight. After the ablation the hepatic stump is sutured to the edge of the abdominal wound, or the great omentum can be sutured to the cut surface of the liver or the stump can be put back into the abdominal cavity and the walls closed with a suture in three stages, after dressing with collodion gauze. This means of hemostasis is almost invariably successful; it can be supplemented by suturing the edges of the wound in the liver together, after interposing a gauze tampon, leaving the end of the tampon protruding from the cutaneous wound, and removing it in a few days in one or two sittings. Mikulicz has treated a case of syphiloma of the liver in this way with great success. Experience on the cadaver shows that the most convenient cutaneous incision is parallel to the arch of the false ribs, one or two finger breadths below, 10 to 15 cm. in length, starting at the right parasternal line for the right lobe, and at the median line, swerving to the left, for the left lobe.

Surgical Intervention in Tuberculosis of the Kidneys.—Tuffier reports fifteen operations performed on the kidneys for tuberculosis, about a tenth of his operations on these organs (152 in all), in the course of the last eight years. He only operates when all medical treatment has been found ineffective, and considers the three principal indications: intense hematuria, pains and evidence of infection and intoxication. Benign hematuria does not require intervention, but only severe cases, with sufficient loss of blood to weaken the patient to a dangerous degree. He has operated twice under these conditions. The first was a woman of 42, with dangerous crises of hematuria and consecutive anemia, on whom he performed nephrectomy. The ablation of the left kidney disclosed a number of tuberculous abscesses in the parenchyma. The patient has never had a recurrence of the symptoms and when seen three and a half years afterward was in perfect health. The other case was a woman of 20, with severe hematuria for three years previously. After lumbar incision, and the discovery of a voluminous kidney, he performed nephrotomy, and the patient continued eighteen months without a recurrence of the trouble. Since then she has had slight returns of it at times, but not enough to warrant another intervention. He has performed four operations to relieve excessive pain. The first case was a woman, whose sufferings had much reduced her. The kidney was found riddled with tubercles and removed; the ureter seemed intact. She recovered finely and when seen five years later was still in perfect health. One peculiarity of this case was the sudden appearance of obesity after the operation, which assumed such proportions as to be actually pathologic, as also occurred with another patient. This condition gradually passed away. The second operation to relieve pain was performed on a young Russian woman, who had been examined by Billroth of Vienna, Wood of London, and Erb, who at first all ascribed her troubles to neuralgia, and later to lithiasis, as did also Senator and Israel at Berlin. Finally Gennes discovered the Koch bacillus in the urine, and Oertel at Munich and Czerny confirmed the diagnosis of tuberculosis and advised an operation, after the whole range of local applications had been tried in vain. Her renal pain was so severe that it was impossible for her to walk, and there were also frequent desires to urinate. Morphin alone relieved her. The pain dated from a fall in 1892, after which she had suffered from the pain in the kidneys, with frequent crises, becoming worse and worse. Tuffier performed nephrectomy by the lumbar route, January, 1896, freeing the patient from her troubles. The ureter was found dilated and granulous, and by the end of the year the desires to urinate returning, she consulted Israel again, who found by cystoscopic examination a tuberculous patch at the entrance of the ureter, showing descending infection. A third patient was operated and restored to health except for a slight frequency of mictions and trifling hematuria. When a calculus forms the pain is atrocious, and in one case had driven the patient, a former pupil of his, to morphinomania. The calculus was the size of a large nut and was found in the lower end of the ureter. The suffering had undermined the patient's health to such a degree that he did not long survive the operation. Tuffier has performed nine operations to relieve the accidents of tuberculous pyelonephritis, acute or chronic, but these operations are merely palliative and with the sole hope of affording temporary relief. They emphasize anew the importance of operating at once when the diagnosis has been established with certainty. He advises nephrectomy as preferable both in the hematuric and painful variety. His experience certainly demonstrates the existence of primary renal tuberculosis, which some have denied; and the perfect health of some of his patients operated four, five and six years ago, is conclusive evidence of the value of intervention in these cases.—*Presse Méd.*, January 9.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
Per Annum, in Advance $5.00
Single Copies . . . . . 10 Cents.
Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 61 Market Street (Occidental Buildings), Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.
This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.
On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.
Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.
All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street (Occidental Buildings), Chicago.
Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

INFORMATION WANTED.
It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, MARCH 20, 1897.

CARDIAC DISTURBANCES AS THE RESULT OF EXHAUSTION.

While physicians and pathologists are well acquainted with the clinical and pathologic changes which take place in the heart in cases of true disease, we know very little about those alterations in its nervous and mechanical government which result very often in serious functional disturbances, and some of the most troublesome and puzzling cases which we have to treat occur in patients without apparent grave organic valvular or myocardial disease, but who nevertheless suffer from cardiac disorders with palpitation and a sense of oppression and precordial discomfort. Quite thirty years ago, attention was called to at least one type of this condition by Dr. J. M. DA COSTA, who described it under the title of "The Irritable Heart of Soldiers," but although we in this country have not a sufficiently large military force to bring us in contact with persons whose hearts have been strained by the severe exertions of military life, active practitioners constantly see persons who have over-exerted themselves in athletic games, presenting symptoms of cardiac disorder which follow out in every respect the symptoms described by DA COSTA. In some of these cases any exertion develops very marked over-action of the heart so that it beats violently against the chest wall. Its sounds are exaggerated and its impulse is diffused. In other cases the action of the heart may become unduly feeble, yet the age of the patient, the condition of his blood vessels, showing an absence of degenerative changes, and the absence of any history of infectious disease, prevent us from considering that there is degenerative change in the heart muscle.

Our attention has been recently called to this matter once more not only because we have had under our care several cases of this character occurring in young men who have been engaged in foot-ball under excessive training or no training at all, but also by a brief article in the *Journal des Practiciens* for Feb. 13, 1897. In this article it is pointed out that on the continent of Europe palpitation of the heart in soldiers and also in civilians is frequently met with. It is usually associated with nervo-vascular disorders, with over-action of the heart and sometimes conditions of asystole. Two chief factors are supposed to underlie these conditions of cardiopathy; the first of these is excessive fatigue when the heart and other portions of the body are not accustomed to over-exertion, particularly if the fatigue is continued over a considerable period of time. Probably in these cases there is both dilatation and hypertrophy. Other causes which have been considered as pathogenic have been grouped together in three theories; the first theory is the mechanical one which expresses the belief that the condition of the heart is solely produced by the mechanical strain thrown upon it; the second, or the chemic theory, rests upon the opinion that the excessive labor produces a toxemia which acts deleteriously upon the heart; and the third theory is that there is an inflammation of this viscus. Certain it is that in a number of cases there is an excessive accumulation of blood in the right cavities and in the venous circulation, associated with insufficient oxidation of the blood and the constant accumulation of poisonous materials in this fluid. Thus SEITZ and CURSHMANN believe that the accumulation of sarcolactic acid and carbolic acid is very considerable under these circumstances and in addition we must remember that the valves of the heart are strained by such excessive endeavors. It is supposed by some French authorities that the accumulation of these products exercises a very deleterious influence upon the tissues, an influence similar to that produced by the poison of typhoid fever. The symptoms of heart-strain have been divided by other authors into several classes: First, those in which there is arhythmia, palpitation or intermittence. Second, those in which there is congestion, hyperemia, myocarditis, hypertrophy, dilatation and fleeting valvular murmurs. Third, those in which there is a myocarditis and endocarditis definitely developed, with permanent murmurs and marked cardiac feebleness. Associated with these symptoms we find in the first class loss of appetite and weight, that the patient is pale, and easily fatigued, has various pains darting and otherwise, and altogether is in a condition of asthenia. In the second class, for the more grave forms that we have men-

tioned the lassitude is extreme; there is pain in the muscles and in the joints, and general depression; digestion is embarrassed; the tongue is coated; the patient is sleepy, has a poor memory and a feeble walk, and dislikes exertion. There may also be precordial pain, some edema about the ankles, with albuminuria and even a slight degree of fever, with dyspnea and small pulse and profound adynamia. Murmurs can be heard in the heart and are usually widely diffused.

The treatment of such functional troubles consists in absolute rest, the use of cardiac tonics and an exceedingly gradual return to active muscular movements.

RECENT INNOVATIONS IN MEDICAL INSTRUCTION.

The last generation has witnessed marvelous advances in methods of medical instruction, practical demonstrations having gradually displaced merely didactic teaching, and laboratory and clinical work superseding wherever possible the ordinary lecture. Within this period of time too the various special departments of medicine have grown up and the demands upon student and teacher are today much greater than ever. The obviously crowded state of the profession, the lengthening of the period of study, the requirement of State examination and other considerations of allied character seem not to deter increasingly large numbers from taking up the study of medicine and the continual organization of new institutions of teaching.

The medical profession of the United States owes a debt of gratitude to the city of Philadelphia for a number of reasons. In the first place, Philadelphia is the birth-place of the AMERICAN MEDICAL ASSOCIATION. That city has besides furnished some of the most brilliant names in the annals of American medicine, and indirectly through its schools it has provided the country at large with a considerable number of able, conscientious and faithful practitioners and teachers. Philadelphia has also contributed very generously to medical literature. More recently it has distinguished itself by the introduction of several new features in medical education, of which we shall speak briefly.

To the observant critic it will be admitted that the true spirit of medical progress still holds sway in Philadelphia. Though a number of other cities have entered into active competition for the first place Philadelphia still occupies a leading position as a medical center. Her publishing houses turn out annually more medical works than do those of other cities; her medical men write as liberally, if not more liberally, than the medical men of other cities; her medical schools stand upon the highest educational plane and their graduates compare favorably with those of other schools; her College of Physicians possesses, next to the Office of the Surgeon-General of the United States Army, the largest medical library in this country; and finally she has not been backward in original investigation. The occasion seems opportune to speak of a few of these things. In this connection we would refer first to some facts in connection with the development of the University of Pennsylvania in the past decade. Each year sees the organization of new departments, the extension and strengthening of old courses and the erection of additional buildings in respone to the increased demands for a higher and still higher plane of general and medical education. The University possesses one of the first laboratories of hygiene established in the United States, which is doing excellent work both on its own account and in the education of hygienists who take up similar work in other institutions and in other cities. From the only recently established Pepper Laboratory of Medicine a series of original investigations is emanating and a corps of scientific investigators is developing that promise to do credit alike to Philadelphia and to the entire medical profession. All of the other Philadelphia medical colleges also have made strides, as evidenced by the erection of new buildings, the establishment of new courses and the lengthening of the period of study and of collegiate attendance, etc.

In post-graduate instruction also Philadelphia occupies an enviable position. Her Polyclinic, with its large hospital and enormous dispensary service, its numerous corps of instructors and its wide range of facilities, is affording an opportunity to graduates in medicine that will in time remove all excuse for want of expertness on the part of any practitioner in any branch of medicine, however remote from the so-called medical centers. Two innovations recently introduced by this institution seem deserving of especial notice. The one consists in the establishment of an instructorship for anesthesia and the appointment of a competent official anesthetizer whose duty it shall be to administer anesthesia whenever necessary and to instruct the student physicians and resident physicians in the practical application of this important procedure, as well as in methods of resuscitation, etc. Of the deaths and other accidents that occur during or following the administration of anesthetics a certain number at least must be attributed to faulty administration from want of training and practical knowledge on the part of the anesthetizer, perhaps sometimes from inattention and carelessness. The placing of this indispensable therapeutic procedure upon a legitimate and dignified basis commensurate with its importance and the recognition of the responsibilities attached to it, as exemplified by this action of the Polyclinic, will without question do something to make anesthesia safer, simpler and even more useful than it has been. The second innovation made by this school consists in the establishment of a lectureship for defects of speech, probably the first department of its kind in the United States, if not in

the world, with clinical facilities, etc., and the appointment as lecturer of one especially fitted by training and experience for this special work. The profound influence that speech defects are capable of exerting upon the life and usefulness of an individual is so obvious as scarcely to require elaboration at this place. Some of these defects are due to anatomic causes; others are of purely functional character. In both groups of cases intelligent training and persevering education, preceded if need be in the one group by appropriate manipulative or surgical interference, are capable of yielding remarkable results, as has already been demonstrated. The placing of this subject in this manner upon a proper scientific basis must be viewed as a distinct advance in medical education.

In Roentgen photography excellent work is being done in Philadelphia and students are afforded the opportunity of receiving instruction in diagnosis by this new means. Many of the hospitals possess their own equipment, and ready and willing assistants demonstrate daily the practical utility of this most important discovery. In the laboratory of the Philadelphia Polyclinic the presence of particles of steel in the vitreous body has for the first time, we believe, been detected with the aid of the X-rays. In the University of Pennsylvania improved methods have resulted in vastly shortening the period of exposure, so that skiagraphs can be made almost with the same readiness and celerity as ordinary photographs, and some important original observations upon the physical nature of the rays have been made.

The few facts thus somewhat indiscriminately thrown together will tend to show that Philadelphia, while not aspiring to metropolitan distinction, still holds a foremost place in the matter of medical education and sustains her established position as a medical center. That this is not mere idle boast we feel sure the coming semi-centennial anniversary of the AMERICAN MEDICAL ASSOCIATION will amply show. The welcome of a mother to a long-absent child is not more cordial than will be that of Philadelphia for the members of the ASSOCIATION that was organized in her midst fifty years ago and in whose welfare and advancement many Philadelphians have maintained an active and consistent interest. The members of the AMERICAN MEDICAL ASSOCIATION may rest assured that at the coming meeting in Philadelphia they will be made to feel not only that they are not among strangers, but that they are the welcome guests of brothers and sisters in one large harmonious family.

In addition to the regular sessions of the ASSOCIATION and the usual entertainments steps are being taken to provide a series of clinical and post-graduate demonstrations during the week preceding and that following the meeting. All in all, the coming reunion promises to be the most notable in the history of the ASSOCIATION.

COMPARATIVE ANATOMY EXHIBITS IN WASHINGTON.

No other place in the country has a finer collection of specimens illustrating the morphologic representation of form met with in the organization of the animal body than is to be found in the museums of the National capital. Disciplinary scholastic requirements now place zoötomy side by side with anthropotomy, and the student of the present, whether intending or commenced, can not ignore the practical relativity of these two branches to the science of medicine. By way of preliminary work, most tutors agree that one's anatomic foundation should begin at least with the amphyoxus and ascend the zoölogical scale. Indeed, one of the best German anatomists averred to the writer that a medical student should not attempt the human skeleton until he is thoroughly familiar with the osteology of the alligator. We may say further, that he should go back to the remotest physical basis of life; thence working up to the vertebrates, and through the embryology of the horse, for instance, he may gain sufficient insight into the phenomena of ontogeny and thereby acquire a training in the healthy use of his speculative faculties that shall enable him to begin to investigate the material substratum of the human body. Another claim for the study of the comparison of the organization of animals with that of man, is that it develops common sense and fixes the scientific habit of mind.

Properly speaking, the special domain of compared anatomy lies in the comparison of apparatus and organs in the series of beings, as well as the comparison of animals among themselves and with man. Being the foundation of all zoölogic classification, it has come to be recognized that the character of any good distribution of animals should be drawn from the particulars of their organic make-up rather than from any other consideration. Thus we have come to define the whale as a quadruped. Though fish-like and of essentially aquatic habits this animal is a mammal, has rudimentary femurs, a four-chambered heart, and the blood globules common to quadrupeds.

In addition to the aid to the anatomist in studying the organs in the series of transformations throughout the animal kingdom, physiology draws useful deductions from this study, and the comparative method also teaches that ideas formed at first sight often require to be reformed; for instance, the notion derived from human anatomy that serous membranes are shut sacs does not hold good in other animals, ... the peritoneum, pericardium and pleura are not always closed sacs, as we see in some of the anima series where the texture and epithelial investment o these membranes are more essential characters than their imperforation.

The display of stuffed specimens in the National

Museum, though quite complete and intended for pedagogic purposes, is more useful to the zoölogist than the anatomist. It is rather to the osteologic exhibition that we turn for comparative purposes. Here one finds ample materials for studying the osseous system paleontologically and otherwise in the faithful images of organs represented by saurians from Pennsylvania marl pits, mammoth remains from Alaskan ice cliffs, along with most of the existing forms, upon all of which are impressed constancy of type and variety in modification.

The study and arrangement of many of these objects of biologic interest leads to the diverse paths of correlation and subordination of development, analogies and homologies, to transcendental anatomy, and to other convenient abstractions that the classification of the sciences has rendered necessary.

It is to be regretted that there is no positive fixed classification of these collections nor even a short descriptive catalogue to point out to the student even in a conjectural way the connection of many of the groups to other branches of science. Perhaps the authorities in charge of the collection may look upon the material as that of a building which there is no immediate need to begin for fear of having to tear it down later owing to vicious or faulty construction. Say what we may, however, as to the utility of such collections and of the questions of induction and generalization they introduce into science, the practical physician sees that the consideration of many things in comparative anatomy touch upon points of embryology, therapeutics and toxicology.

Without going into details we know that many of the lower order of animals are subject to the same diseases as the human species. Monkeys and other animals have rickets in confinement, while tubercle is common in pigs and cows. Among the specimens of the Army Medical Museum are the head of hydrocephalic calf, an osteo-sarcoma from a bull and from a horse, and a large collection of urinary calculi from the latter animal. There is also a series of cancer specimens from the dog; a horse stomach showing rupture and parasites; the heart of a horse with cardiac hypertrophy, and the mesenteric artery of a horse showing verminous aneurysm.

Nor is the question of immunity without a ray of filiation to the subject in hand. Recent bacteriologic experiments show the immunity of animals to typhoid fever; some are susceptible to anthrax as mice, but rats are exempt; tubercle is extremely rare in sheep, goats, horses, asses, and in most animals of active habits; guinea pigs are most refractory to pneumonia; rats, mice, guinea-pigs and rabbits succumb to plague, but pigeons do not, though this has been questioned; glanders and farcy are communicable from horse to man; and tumors in animals are histologically identical even in fishes.

We therefore can not survey the great field of biologic science without seeing how such ideas as the foregoing bear upon medicine both theoretically and practically, and how they have helped to shape the mind of the great exponents of evolution as well as that of the humble practitioner.

HYPNOTIC INFLUENCE AND CRIME.

About two years ago, there was tried in the State of Kansas a case that excited considerable general interest through the country, inasmuch as it was one of the first in which the plea of hypnotic influence had been employed by the prosecution in the criminal courts. The result made it still more notable; instead of the plea being ruled out by the court, it was employed with such effect that the prisoner was convicted and sentenced to death for "suggesting murder," while the actual homicide, whose trial came later, was acquitted. It is said that the frequently repeated assertion of the prosecuting attorney that "this big man, ANDERSON GRAY, had a hypnotic influence over this little boy," frequently repeated, though with no more basis of truth than any other possible invention of an unscrupulous lawyer, had such an effect as to carry away the imagination of the jurymen and to bend all evidence in this direction.

The case attracted much attention at the time and was variously commented on, though generally with condemnation, as an extreme application of a theory not even generally accepted by those competent to judge its worth. Hypnotism was then still in the stage of a popular fad, though medical interest in it was on the decline, and these Kansas farmers doubtless felt that they had the support of scientific opinion in their verdict. It was an excellent example of the truth of the adage that a little knowledge is a dangerous thing, and that Kansas was saved the disgrace of a judicial murder is only due to the delays in the carrying out of the verdict. The victim's friends were active, the public gradually realized that an unwise thing had been done, and to complete the case, the leading witness for the prosecution, the actual homicide, who had been acquitted of the murder on the ground of self-defense and not apparently on that of hypnotic influence, finally confessed that he and his wife had given false testimony, and the last act of the late retiring Governor MORRILL, was to sign a pardon of the innocent victim of pseudo-science.

The case is a hard one for the unfortunate who has been deprived of liberty and fortune and has been so long under an unmerited stigma of murder. It has its public use, however, as an example of what ought not to be done, a warning against the unscrupulous and ignorant use of medical facts and theories in cases involving human life and liberty. If GRAY had been executed, perhaps the moral would have been the same in the end, but there would have been then

more of a tendency to suppress the facts, and some of them might never have come to light in such a way as to demonstrate, as has now been done, the absolute falsity and fatuity of the hypnotic plea. It seems hardly creditable to the Kansas administration of justice that one man could be convicted on the plea of having exercised hypnotic influence for causing a crime, and the party whom it was claimed was thus influenced be afterward acquitted on entirely different grounds, without apparently any stress being laid on the alleged fact that was the sole or principal issue in the earlier trial, and without, at least, a prompter reversal or pardon.

In our editorial of February 16, 1895, commenting on this case the JOURNAL said:

"It will be seen, therefore, that no new psychical elements are introduced into the problem, but the old ones of criminal surroundings and environment which furnish the motive for the commission of all crimes. The logical deduction from these premises is that hypnotism as a defense for crime can have no standing in a court of law; that the commission of crime is as much determined by the moral character of the individual in a hypnotic state as it is in his waking moments."

The sequel of the GRAY case is a striking corroboration of the correctness of our views expressed at the time.

The result will be to discredit future resort to the plea of hypnotic influence as an accusation or a defense, and for this the country is the better off. It lessens the chance of what might be, if certain extreme theorists were to be believed and their views accepted by the courts and the public, a real danger in the administration of justice. It may be that this peril is a very remote one, and that we have safely passed the second cycle of human credulity as to hypnotism; but the outcome is fortunate nevertheless.

A NEW MOTTO FOR THE "RECORD."

The *Record* in a belated article on the Wisconsin Eclectic Medical College proposes a new motto: "Let us have no Diploma Mills in the Capital City of the AMERICAN MEDICAL ASSOCIATION." The *Record* is entirely welcome to any kind of a motto its Editor thinks he needs. Our valiant friend always does better when he has some back-number literature to fight about, and if a motto of this kind is essential to greater New York and the still greater SHRADY, let him print it in red ink at the head of his columns and sail right in. By the way, we printed last week a full account of the downfall of "Dr." RUTLAND and his bogus college, and several times we have published exposures of RUTLAND'S mill, but the *Record* did not find it out until the matter had ceased to be news to everybody but the unfortunate readers of the *Record*.

One other charming custom of our sweet and graceful contemporary is the confidence game it continues to play upon its patrons by the announcement "[seventy-six pages in this number]" constantly displayed on its front page. In the number for February thirteenth, we notice that forty of the alleged "seventy-six pages in this number" were advertisements, of the publishing firm owning the *Record* and others. The poor old thing is apparently compelled to resort to desperate straits—nothing suits it—it frets about the editorials in this JOURNAL, about the Code, about Secretary ATKINSON, and about other matters. In fact we are beginning to think, and the thought pains us beyond expression, that we are not suiting the *Record;* that the ASSOCIATION itself will fall under its once mighty displeasure if something is not done quickly to quiet its nerve.

"Quick! Some civet, good apothecary!"

THE MISSION OF THE "MEDICAL RECORD."

The persistent attacks of the *Medical Record* of New York upon the AMERICAN MEDICAL ASSOCIATION, lead us to look into the matter, with a view of determining the motive underlying them, and taking the most reasonable explanation of its course that offers, we are impelled to the conclusion that the *Record*, reading the handwriting on the wall, and knowing that the healing of the old dissension on the Code question would make it no longer a potent factor as a leader, deliberately seeks quarrels and promotes discord. Should the New York State Society and the Association heal their differences, and once more come into the AMERICAN MEDICAL ASSOCIATION, there would be no market for the embroiling paragraphs of the *Medical Record*, and its peculiar mission as a promoter of discord and dissension would be ended. This is contrary to the business interests of the manufacturers of the *Record*, and consequently we observe ebulitions from time to time in the columns of our great and frequently good contemporary. We have been told that the editorial sanctum of the *Record* was usually kept at a temperature of —13° F., but when some trembling slave of the mighty incumbent, through inadvertence, mentioned the name of the ASSOCIATION, the air became blue with exclamation points, and the temperature rose to 212° F., with incredible speed.

ACCESSION TO THE NEWBERRY LIBRARY.

Prof. NICHOLAS SENN on Saturday last cabled to Berlin a telegram authorizing the shipment to the Newberry Library of the entire collection of the late Prof. DUBOIS-REYMOND of Berlin. This collection consists of 14,000 bound books, mostly on physiology, and a proportionate number of pamphlets.

It will be remembered that the former generous donation of Professor SENN to this library consisted of the BAUM Library mostly surgical. This will add to the SENN collection a complete physiologic library equaled probably by few if any in the United States,

and it goes a long way toward putting the Newberry in the front rank of medical libraries.

The generous act of Professor SENN is one which will still further entitle him to the gratitude of the medical profession of Chicago and indeed of the profession in general, for bringing these two famous collections to America.

THE MAYORALTY CONTEST IN CHICAGO.

The Democratic platform says among other things: "We condemn the appointment of health commissioners made by the present Republican administration and declare for the selection of a physician to fill such office." The Republican candidate for mayor says that he will not appoint any incompetent person to any office. So that it is not at all probable that the lay-commissioner-business-man health officer will be a factor in the affairs of the city government after May 1, 1897.

TRANSACTIONS AND JOURNALS WANTED.

We have an inquiry from Berlin asking rate at which we can supply a complete set each of 1, The Transactions of the AMERICAN MEDICAL ASSOCIATION; 2, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Any of our readers having a complete set of either for sale, will confer a favor by addressing this office and naming price.

CORRESPONDENCE.

Acute Otitis Media.

CHICAGO, March 16, 1897.

To the Editor:—In the JOURNAL of Feb. 27, 1897, a paper appeared on "Otitis Media" by Merrill Hopkinson, M.D., of Baltimore. After having favorably referred to Dr. Pierce's paper on this subect (JOURNAL Dec. 19, 1896) he disagrees with the latter especially as regards treatment, on account of an experience he had in his own person. Dr. Hopkinson was suffering from an acute otitis media produced by using a nasal douche in a "mild attack of post-nasal catarrh." Dr. H. should have known of the violent protests against the use of the nasal douche in every little affection of the nose. The only one indication for this procedure is the removal of crusts in ozena. Even there it is not fair to let a patient use it until the physician is perfectly convinced that it is well applied. After the douche the nose should be cleared only by snuffing the crusts back into the pharynx and spitting them out, never by blowing; this produces only negative, not positive, pressure in the nose and nasopharynx.

In consequence of this 50 per cent. glycothymolin douche an inflammation of the middle ear made a hasty appearance, which the doctor tried to check with instillations of cocain and atropin. What was the reason for this? Did he expect that these drugs would be absorbed through the epidermis of the external meatus? And even if they were, would he expect any antiseptic effect from them in the middle ear? Do we not have to add antiseptics to either one of these solutions in order to keep bacteria from growing in them? Or perhaps he thought of the anodyne effect and stoppage of secretions, attributed to these two drugs by some people who wrongly infer that they produce the same results in infected tissues and inflamed mucous membranes which they produce in healthy tissues. Even if they would stop the secretion, is that not just the opposite from what we want? Or does the Doctor not prescribe an expectorant in cold of the lungs or nose, where the secretion is thick and dry, and does he not remember the relief a free secretion brings? In acute otitis media the great ease after paracentesis is equally produced by the abundant secretion.

The only reason for the use of cocain and atropin in otitis is therefore compliance with the well-known maxim *ut aliquid fiat.*

A little worse must be said about the advice of Dr. Chisolm, who being opposed to the use of ice, instructed Dr. Hopkinson to syringe the external meatus with hot solution of mercuric chlorid, 1 to 1000. The heat may have been agreeable to the patient at the moment it was applied, but it certainly did not have the desired effect on the course of the inflammation. Ice would have been better, though less agreeable. Furthermore, the irritation and stirring caused by ten or twelve injections daily is surely not beneficial. Does not the Doctor notice that we are giving up this terrible active treatment of acute inflammations, wherever they are located, in favor of complete rest; for example, in peritonitis, lymphangitis of limbs, etc. And finally, what effect should the bichlorid have? The best of it is that it is not absorbed. But it involves danger. A perforation of the membrane in acute otitis may happen at any moment, and then a bichlorid solution, 1 to 1000, is forced into the middle ear. What oculist would use such a solution in conjunctivitis of the eyes, and the mucous membrane of the ear is much more tender than the conjunctiva. Mind, I do not speak of old badly infected suppurations and necrotic processes, where the deepest structures of the membranes are altered and the sensitiveness lowered to almost nothing, but of acute inflammation, and there a bichlorid solution, 1 to 1000, can do only great harm. Furthermore, such a solution has a tendency to produce fibrous thickening of the membrane, which we have so much reason to avoid, since the function of the ear depends greatly upon the perfect elasticity of a great part of this membrane. All these facts have been discussed time and time again. But yet another proof that the Doctor is not quite familiar with the literature of ear diseases, is the name of "modified Politzerization" which he gives to inflating the ear by grasping the nose and blowing. This is called Valsalva's method in English, American, German, French and Italian otologic literature, from Dr. Valsalva, who described Dr. Hopkinson's "modified Politzerization" some two hundred years ago.

Later on the Doctor expresses his satisfaction with the effect pilocarpin had on him. Against this there is nothing to be said. Undoubtedly, it was one of the best things to use under the circumstances. Yet we can not help admiring his logic; he is scared of morphin and uses another more dangerous alkaloid, the pilocarpin. A Turkish bath or a hot stove and a hot bed with some hot tea or other drink would have brought about the same result. Why use a sledge hammer to kill a louse?

But the emphasis the Doctor lays upon the injunction to perform paracentesis has absolutely no reason. Yet I do not think that I can convince him. It seems that it must be easier to drive a nail in the hardest rock of the Rocky Mountains than to convince the Doctor of this error of his treatment, although it caused him much trouble and pain, which he might have avoided. All I feel bound to do is to describe the treatment as it is advised by common sense, and taught in literature by Gradenigo and Bezold and endorsed by a number of American and English writers. As soon as the diagnosis is made, the external meatus should be syringed with boric acid solution. With a well disinfected paracentesis knife a paracentesis should be made in the posterior half of the membrane, down nearly to its margin. The authorities are explicit in demanding that every general practitioner be able to perform this little operation. This may be followed by one careful inflation, then dry-

ing of the meatus and packing it gently with iodoform gauze, which may be changed once or twice every day. Ice is indicated when there is tenderness of the mastoid process. The patient feels great relief after an hour or two, when free secretion sets in. He usually sleeps soundly the first and every following night. The success is so general that, if it does not ensue, the perforation must be too small or there are complications. Should the perforation close before the symptoms have disappeared, paracentesis is repeated. As soon as the inflammation has ceased the opening will close without leaving any trace, and hearing is restored after six or ten days. Against the one experience of Dr. Hopkinson I can produce dozens of my own histories and hundreds from literature. The advice of free drainage of every acute gathering of pus is as useful in the ear as elsewhere. Why should we always go back and rely upon unsafe medical means, to repeat again and again every unsatisfactory experience? Why not at once use simple surgical treatment for such a typically surgical disease as acute otitis media? Why expose our patients to all the bad consequences that a retention of products of inflammation may bring about? Respectfully,

J. Holinger, M.D.

Peru, Ind., March 16, 1897.

To the Editor:—In my comments on the treatment of "acute otitis media," in the last issue of the Journal, March 13, the clause reading "which would have *burned* the moisture, etc., should have read: which would have *lessened* the moisture, etc. In the same issue Dr. W. H. Daly of Pittsburg, Pa., gives instructions about blowing the nose, following the use of the nasal-douche, etc. "To blow one side of the nose only at a time."

I would suggest that the only efficient way of blowing the nose after the use of the douche, etc., as well as other times, is to simply *blow forcibly without holding either side*, on the same principle that you expectorate without holding the mouth. To be convinced of the truthfulness of this statement, you have only to follow out the above suggestion.

J. O. Malsbury, M.D.

Respiration and Phthisis.

Ottawa, Ont., March 6, 1897.

To the Editor:—Will you kindly give space to the following in an early issue and thus aid in this important work? Without the coöperation of the leading medical journals nothing can be accomplished in that behalf. Trusting you will so favor, I may hereby thank you in advance, and am, sir,

Very truly yours, Edward Playter, M.D.

To Members of the Medical Profession, Individually—in the Interest of Medical Science:—

As there is evidence tending to prove the theory that all persons predisposed by heredity to consumption have a respiratory capacity or action insufficient for good vigorous health, probably a proportionately small chest with insufficiency of lung membrane, that the predisposition is mainly or primarily due to this cause; in other words, that the insufficient respiratory function is the special primary feature of the predisposition (a condition which may be, practically, acquired by habit, occupation, etc.), I desire the coöperation of the profession in an endeavor to help to establish by means of collective investigations, the correctness or otherwise, of this theory.

In this behalf I hereby ask all physicians who have patients predisposed to, or in the early stage of, consumption, to send to me on a post card (will suffice), the information below indicated. As soon as I can study and collate the replies I shall make the results known to the profession.

Give 1, name (or initials); 2, sex; 3, age; 4, occupation; 5, height; 6, weight (average, when in usual state of health); 7, circumference of the chest on a level with sixth costo-sternal articulation when momentarily at rest after an ordinary expiration, and also 8, after habitual natural expansion or inspiration (which last usually exceeds the first measurement, expiration, 7, by an increase of only about one-fourth of an inch); finally, 9, the circumference after a *forced* expiration, and also 10, after a forced inspiration (these two measurements, 9 and 10, varying or showing a range of from $1\frac{1}{2}$ to 4 inches). The patient should be as calm as possible and had better, usually, practice the *forced* breathing for a few acts before these two last measurements, 9 and 10, are taken.

To be of value, all four measurements should be taken as carefully, accurately and free from haste as possible.

Any further information, in brief, as to the degree of heredity (family history) in cases, prominent symptoms, loss in weight, cough, dulness on percussion, etc., etc., or any remarks, will be a decided advantage.

Measurements of two cases, or several, on the average, could be given on one card.

With the hope that many will comply with the above request, and with much respect for and interest in the profession, I am,

Yours truly, Edward Playter, M.D.

"Devil on Two Sticks."

Chicago, March 5, 1897.

To the Editor:—Is this an authentic quotation of a book published in 1768? As you are an authority on these matters I ask you. Cordially yours,

E. J. Doering, M.D.

Foote, "Devil on Two Sticks" 1768.

Hellebore: "I have discovered the primary cause of all distempers incidental to the human machine. And these, brethern, I attribute to certain animalculæ or piscatory entities, that insinuate themselves thro' the pores into the blood and in that fluid sport, toss and tumble about like mackerel or codfish in the great deep." Yours, Will.

Feb. 24, 1897.

"This piece consisted of nothing more than the introduction of several well-known characters in real life, whose manner of conversation and expression this author had very happily hit in the diction of his drama, and still more happily represented on the stage by an exact and most amazing imitation, not only of the manner and tone of voice, but even of the very persons, of those whom he intended to *take off*. Among these characters there was in particular a certain physician, who was much better known from the oddity and singularity of his appearance and conversation, than from his eminence in the practice of his profession. The celebrated Chevalier Taylor, the oculist, who was at that time in the height of his vogue and popularity, was also another object of Mr. Foote's mimicry and ridicule."—From article upon Samuel Foote, in Baker's "Biographica Dramatica," vol. 1, part 1.

Samuel Foote actor and dramatic author, born 1720, died 1777. The character of "Hellebore" was one assumed by the Devil.

Le Sage also wrote a novel with the same title. Of course there was nothing new in Hellebore's suggestion, as Redi a century before had announced it and Vitruvius the Roman architect came very near it, in advising that houses be built away from swamps so as to avoid the exhalations from the "fenny animals."

Ophthalmia Neonatorum.

Pittsburgh, Pa., March 8, 1897.

To the Editor:—Recently I had a case of ophthalmia neonatorum in which only the left eye was affected. This has never occurred in my practice before. The disease has always affected both eyes and this is the reason I report the case. My treatment for this disease is first to wash the eyes out well with warm water by means of a small wad of medicated cotton followed by a wash of muriat. ammon. gr. vi, bichlorid. hydrarg. gr. j. aquæ dest. ℥vi. M. Sig. A teaspoonful in a teaspoonful of boiling water, immediately followed by a 20 grain solution of argentum nitrate and then by a saturated solution of chlorid of sodium. This is repeated every three or four hours. Once a day or once in two days I apply a drop or two of the solution of sulphate of atropia 1 grain to the ounce of distilled water. My cases have always rapidly recovered

under this treatment. If we have reason to believe that the disease is of a specific nature then small doses of calomel may be given.

JOHN M. BATTEN, M.D.

Sequela of Measles.

TIVERTON, R. I., March 13, 1897.

To the Editor:—Are measles followed as a sequela by acute or chronic articular rheumatism?

A case: W. H., exposed to measles came down sick Monday, March 1; eruption that evening. Friday or Saturday March 5 or 6, pain in joints developing articular rheumatism; at present time improving, but not able to leave bed except as removed by attendants. Query: Would W. H. have had the rheumatic attack now if he had not had measles or is it dependent upon the peculiar poison of measles. I should like the experience of the profession upon this point.

Respectfully. E. P. STIMSON, M.D.

PUBLIC HEALTH.

Infection from Pork.—An epidemic that affected fifty persons and caused one death was investigated by the authorities, and no toxic substance was found in the suspected pork, but bacteriologic tests showed the presence of a bacillus, evidently the specific bacillus of the pneumo-enteritis of the pig. It was not found in the fecal matter of the patients, but the bacterium coli was found in them in a very virulent form. An epidemic of hog cholera had been prevailing in the district just before, and one farmer had sold fifty-seven pigs, forty-one of which had died of the disease. The meat that had been found too much diseased to be offered for sale had been buried at a slight depth, instead of being burned, and no precautions had been taken to isolate the diseased animals. Pouchet, who reports the circumstance, adds that it is the first time that bacteriologic investigation has been applied in such a case.—*Semaine Méd.*, February 13.

The Vaccination Laws of Europe.—Dr. Thorne Thorne, C.B., principal medical officer of the Local Government Board, returned to London last week after his visit to Paris and Brussels to study the means of vaccination at both capitals. Dr. Thorne Thorne, who was accompanied by Dr. Monckton Copeman, first visited Paris and was given every facility for inquiry by the professors of the Institut Vaccinal affilliated to the municipality of Paris, and the Académie de Médecine, where vaccine lymph is distributed gratuitously after admixture with glycerin, throughout the whole of France at the expense of the state. A visit was afterward made to Brussels, where the state institution, the École de Médecine Vétérinaire, and Dr. Janssen's vaccination department under the municipality of Brussels, were visited. Visits have also been made to certain stations in Germany, one of the late issues of the *Lancet* having a report of one to Berlin. The result of these investigations, caused no doubt by the report and recommendations of the Royal Vaccination Commission, may be pretty confidently forecast, namely, the gradual discontinuance of the old English method of Jennerian arm-to arm vaccination (very little bovine virus having at any time been officially employed in Great Britain) and the substitution therefor of the more modern methods and material. It is evident that there is a more promising future before the forms of glycerinated vaccine, if it be true as has been stated regarding the new lymph of the New York City Department of Health, that it is possible to report 1,500 consecutive primary vaccinations with the new agent without one failure.

Bacterial Purificaton of Potable Waters.—The London correspondent of the *American Practitioner and News* refers to some recent researches of Dr. Percy Frankland, F.R.S. He has discoursed to the Instititute of Civil Engineers on bacterial water purification. The discussion which followed centered round the importance to be attributed to Koch's arbitrary standard that a so-called "good" water should not contain more than one hundred microbes per cubic centimeter. Dr. Frankland pointed out that this statement of Dr. Koch's was made in the infant days of bacterial investigation, and no serious meaning could be attached to it now. He reminded the assembly that many years ago he showed how, on keeping a sample of the very purest drinking-water obtainable, the original microbes present could increase to hundreds of thousands, and that yet no one would venture to condemn this water. Dr. Percy Frankland described some experiments he made recently with typhoid germs, in which he had introduced some of these microbes into deep well water, which was almost free from bacteria, into Thames water, which contained a large number, and into Loch Katrine water, in which the number was intermediate between these two. He found that the typhoid bacilli died off more rapidly in the Thames water than in that from Loch Katrine, while they persisted longest in the sparsely populated deep well water. Thus the longevity of these disease germs was inversely proportional to the bacterial population of the waters into which they were introduced.

Defense of Europe Against the Plague.—The immediate necessity of an international organization to prevent the spread of the plague is ably presented by A. Proust, Inspector General of the Sanitary Service, in an address reported in the *Bulletin de l'Acad. de Méd.*, January 26. The dangers to the rest of the world that have come with more rapid transportation and especially the Trans-Caspian railroad and steamboat route, render prompt organization of the powers necessary, and it is worse than useless to leave the task of arresting the plague to the Oriental nations, or even to comply with their wishes and entrust the frontier posts to Mussulmen physicians. Realizing the almost inevitable spread of the contagion during the annual Mussulman pilgrimages to Mecca, the French government has absolutely forbidden anyone to go from Algiers and Tunis this spring, and the Egyptian government has also announced that no one can go from Egypt unless he can prove that he has sufficient money to pay his expenses for six to eight months in the Hedjaz, and if the plague breaks out there he will not be allowed to return to Egypt. If the pilgrims did not arrive in such an enfeebled condition they would be less liable to contract disease. They are crowded on the steamers so closely that it is impossible for them to lie down, and after landing they usually sleep at night on the bare ground in the midst of miasmas and exposed to severe cold, while scorched by the sun during the day. The food and water are both bad and sold at exorbitant rates. It is politically and practically impossible to put an end to these pilgrimages, but the conditions might be made more hygienic, and Proust urges the powers to combine for this purpose, observing that the more we do *for* the pilgrim the less we shall have to do *against* him. Like all who refer to the subject he condemns the apathy of England, who, for political and commercial reasons, refuses to allow sanitary surveillance along the Persian Gulf, where the danger to Europe is most imminent, while she sanctions the most rigorous quarantine at Malta and Gibraltar, where there is comparatively little to fear.

The Effect of Gaseous Aeration of Water on Bacteria.—Dr. G. C. Frankland, writing to *Nature*, draws attention to the results of bacteriologic research in determining the hygienic importance, from a bacterial point of view, to be ascribed to the gaseous aeration of water. Notwithstanding the large number of experiments that have from time to time been carried out, considerable divergence of opinion exists as to the precise hygienic value with which the carbonation of water can be credited. Some authorities state that in such waters the number of bacteria steadily declines, whilst others again have observed as

distinct a multiplication of the bacteria present. The possibility of these two contingencies is, however, quite conceivable without impugning the accuracy of the results obtained in either case. In the first place, it has to be remembered that widely different types of water serve for the manufacture of artificial aerated waters, the bacterial contents of which are widely divergent, both qualitatively and quantitatively. It has been shown that whereas some bacteria rapidly disappear in aerated waters, others are again endowed with fabulous powers of reproduction and longevity. Thus in one instance a sample of carbonated water was found to contain, one hour after its manufacture, 8,350 microbes per cubic centimeter; these figures rose, however, after the lapse of 210 days, to the considerable number of 213,400 per c.c.; while later on, at the end of 428 days, there were only 46 per c.c. As regards the behavior of pathogenic bacteria in carbonated waters, the results so far obtained are decidedly more unanimous. There is no doubt that a very general impression prevails that a barrier of no mean obstructive power is placed between the consumer and zymotic disease by the substitution of aerated for ordinary drinking water, at any rate during times of epidemic; and this impression is to a certain extent justified by investigation, though it can at the same time only be encouraged to a moderate extent. Although storage even for such considerable periods of time as over two years can not, at any rate in some cases, secure the entire elimination of ordinary water microbes, yet storage of considerably shorter duration is of undoubted service in the destruction of disease germs.

The Water Supply of Chicago.—The city of Chicago, in spite of the great engineering work that was carried out in 1893, has not yet secured a satisfactory water-supply, and we understand that the Department of Health has considered it necessary to shut off the town water from as many as 250 public schools with an aggregate of 208,000 scholars. The task of making special arrangements for the supply of water upon so large a scale must be a very formidable addition to the duties of the School Board. The first impression of the visitor to the city on looking out upon the broad expanse of Lake Michigan, and learning that it is an inland sea of singularly pure and potable water, is that here at least the question of water-supply is solved by nature, whatever the dimensions or demands of the city may be which stands upon the shore. But, in point of fact, the very abundance of the water is its bane. If a river of moderate dimensions flowed through the city there would be no fear of contamination. The simple expedient of placing the water intake above the sewage outflow would make the city absolutely secure against this peril. But in Lake Michigan the volume of water is so vast that the flow is imperceptibly slow, and so long as any part of the city's sewage is permitted to flow into the lake there will be a danger of its drifting into the water intakes. Experiments have shown that this danger was notably reduced by putting the intake at a distance of three or four miles from the shore; but they also showed that this was no complete protection, and now the experience of the School Board confirms our experimental results and enforces the conclusion that complete isolation of the water supply is the only safe and trustworthy course. Unfortunately for a community residing on the shores of a great lake, it is a course presenting many and special difficulties. In these circumstances it is no small matter that it has a great reputation for enterprise and public spirit to maintain.—London *Lancet*, February 20.

The *Lancet* does not seem to be aware that the great drainage canal is not only not yet completed, but that nobody knows when it will be.—Ed.

The Weather Bureau and Medical Climatology.—A few words may not be out of place in explanation of the following resolutions:

From time to time, articles have appeared in the medical press, pointing out the limitations of our knowledge of climatology and the insufficiency of data, as regards both climatic features and clinical observation, upon which to found a really scientific climato-therapy. In an article, for example, by Dr. James B. Walker, President of the American Climatological Association, appearing in the *American Journal of Medical Sciences*, January, 1897, these points are dwelt upon, and a comparison is made of the thorough study of these matters in Europe, with the somewhat rudimentary knowledge of medical climatology that has been reached in this country. It is to be regretted that all this is, at present, true, but it is well to know that the means are at hand by which this state of affairs may be greatly improved. At the basis of all scientific climato-therapy must lie a thorough and accurate knowledge of climatology; with this alone can we correlate our clinical observations with any hope of evolving therefrom any system of scientific treatment of disease by means of climate. It is the belief of this Society that in the admirable methods and appliances of the Weather Bureau we have, already provided, the means for a well-nigh perfect determination of every climatic feature. Not only is this true, but from the fact that observers at all first-class stations have the same training, the same methods and the same apparatus, and that the element of "personal equation" is eliminated by frequent changes of observers, we are induced to believe that no foreign country is better equipped for the study of its climate. For the above reasons, it is obvious that the meteorologic records of each Western Station are strictly comparable with those of every other station, which can not be the case where independent and diverse methods of observation are in use in various places; and this feature of our Weather Bureau is one of vital importance to successful results.

The accompanying resolutions speak for themselves, but their object can be fully appreciated only by those who have made a study of the statistical tables in the report therein referred to, and it is earnestly hoped that those who read these resolutions may obtain from the Weather Bureau copies of Vol. 1, Signal Service Report, 1885. It is evident that, the object of the resolutions being the adaptation of the accumulated data to the needs of the medical profession, such an end can best be reached through the joint action of a committee of medical men and the Chief of the Weather Bureau, and it would seem appropriate that such a committee be composed of members of the American Climatological Association. To such a committee it may be apparent that certain tables might be omitted or modified and that others might with great advantage be constructed from those to be made on the lines of the existing tables.

It would be a valuable feature of the new volume if it should contain also, under the head of each station, a statistical table of the mean of all observations for the whole term of existence of each station—in other words, its local climate as deduced from all data available.

It also becomes apparent that more first-class stations are needed in order to obtain a complete knowledge of the climatology of the United States, and that special attention should be given to the study of those regions whose climatic features promise most as therapeutic agents in the treatment of disease. It is equally obvious that the value of the proposed volume would be materially enhanced by the incorporation of data regarding the geologic formations, topography, natural drainage, water supply, mineral springs, etc., all of which are matters of importance to be known concerning any point to which an invalid might be sent.

Finally, the volume thus made up should be supplied at a minimum cost to the physicians of the United States, enabling them to properly estimate the value of each special region as a therapeutic agent. The work should be revised and brought up to date every five or ten years, so that the effect, if any, of agencies supposed to be at work to modify the climatic conditions in various localities may be known and guarded against, and more especially, because the data for determination of climate become more reliable as the periods of observation become more extended.

To sum up: The object we have in view is to place within reach of the profession a work on the climatology of the United States, which will be a powerful aid to the attainment of a rational climato-therapy; this to be based on the uniform and admirable data of the Weather Bureau, which data are nearly valueless until properly worked up and tabulated. The last compilation was made in 1885, when both the number of stations and the data were generally insufficient, but even then of great value; if it were repeated now the accumulated data and the new stations would render it still more valuable. If more stations are established and the work brought up to date from time to time we may ultimately attain a complete climatic record of the various portions of this country; if in addition to the

tables proposed, notes concerning topography, soil, water supply, etc., should be added, the volume would be an invaluable handbook for the physician.

Your assistance and influence in this matter is respectfully requested.

J. S. EASTERDAY,
Secretary Bernalillo County Medical Society.

ALBUQUERQUE, New Mexico, Jan. 20, 1897.

THE WEATHER BUREAU IN ITS RELATION TO MEDICAL CLIMATOLOGY.—Resolutions adopted by the Medical Society of Bernalillo County, New Mexico, at the meeting held Jan. 15, 1897.

WHEREAS, This Society is impressed with a sense of the supreme value of the methods and work of the Weather Bureau of the United States, in their relation to the science of medical climatology, as illustrated in the series of statistical tables published in Volume 1, Annual Report for 1885 of the Signal Service (now Weather Bureau), said tables embracing all the data bearing upon nearly every meteorologic feature necessary to a complete determination of the climate of many points scattered over the whole of the United States, so far as these data had accumulated up to the date of that report, and

WHEREAS, The value of these tables would be greatly enhanced by working into them the data accumulated in the course of the eleven years which have elapsed since 1885, and a volume of immense value to the medical profession might be produced by appending to these tables, brought up to date, some account of the topography, geologic formation, natural drainage, nature and source of water supply, vicinity of mineral springs, etc., at each station where observations are taken; therefore, be it

Resolved, By the Medical Society of Bernalillo County, New Mexico, that the Chief of the Weather Bureau of the United States be respectfully requested to take this matter into consideration; that the American Climatological Association be requested to coöperate with the Weather Bureau through a committee appointed for that purpose, if mutually agreeable; that copies of these resolutions be transmitted to the Chief of the Weather Bureau, to the Surgeons-General of the Army, Navy, and Marine-Hospital Service, to at least three of the principal medical journals of the United States, to the American Public Health Association and the AMERICAN MEDICAL ASSOCIATION, and to every State medical association in the United States, and their coöperation invited.

Cholera Disseminated by Food Contamination in India—Mr. E. H. Hankin of the Agra Bacteriologic Station, India, occupies the difficult position of a kind of general bacillus detective for the greater part of the Northern Provinces, being in demand all the way from Calcutta to Bombay. In the *British Medical Journal*, December 26, he narrates how he was called upon to discover the causes for frequent outbreaks of cholera or enteric fever among army officers and other foreign residents, at times and in places where the natives were not atacked.

During the summer of 1896, an unusual number of military officers and European officials have succumbed to cholera and enteric fever in India. Outbreaks have been reported in not less than ten places within a period of a few weeks from the one to which Mr. Hankin was called upon to give his professional attention. Of these cases the cholera microbe was detected in the finger bowls; in another case the enteric microbes occupied this position. In another case the cholera microbe was found in a virulent condition in each of the vessels of water kept in the kitchen for culinary purposes. In most of the cases, however, to the best of my knowledge, the investigation had to be carried out without bacteriologic help. During the same time, as far as cholera is concerned, British soldiers have been remarkably free from infection. To the best of my knowledge, in the whole of the Bengal Command during the present rainy season, cases of cholera among soldiers have only been reported from two stations, and in one at least of these places the infection appears to have been contracted while the men were on the march. I believe this remarkable immunity of the British soldier, as contrasted with the relative liability of the British officer and civilian official, is due to the strenuous efforts now being made by officers of the Army Medical Staff to sanitate the soldiers' cookhouses. The kitchens in India most in need of reform are those attached to the officers' messes of British regiments. These are private institutions not subject to official control. It is high time that officers of the Army Medical Staff should be invited to undertake the task of sanitating these kitchens. It will, I think, be clear from the facts described in this paper, that the complete prevention of cholera is rapidly becoming a matter for specialists. The ordinary mess president is no more a specialist than the average subaltern is an epicure. Together they produce and consume horrible delicacies that are often a severe strain on the digestion of their guests. This is not an isolated opinion. I find it is a matter of common remark in all parts of India that I have visited. It is as unusual as it is to me unpleasant to go out to dinner and then to criticize the *menu* in this way; but I hope it will be admitted that the occasion is one for plain speaking rather than for ceremony. When dining at an officers' mess the other day I noticed that the soup was putrid: but my hosts, with sturdy appetites bred of healthy exercise, consumed it with perfect content. The whipped cream poured over the apple pie had the abominable taste of dirty dishcloth, noticed, I believe, by no one but myself. My host had heard vaguely of my recent researches; with the result that the next item on the *menu* had the title "crême à la microbe." It was chocolate pudding. After dinner I inspected the mess kitchen. To all appearance it was perfectly clean, and the mess president pointed out to me with pride a long row of enameled iron saucepans with which he had replaced the more usual *degchies*, apparently under the idea that they would be less suitable than the latter for the breeding of microbes. Nine or ten subalterns in this regiment have had enteric within my recollection, so the need of some precautions was obvious; but I very much doubt whether the mess president had chosen the precaution most necessary. Though in many cases, so far as he himself is concerned, the British officer can only be stimulated into sanitary zeal by attendance at a long series of funeral parties, his care of the private soldiers under his charge is altogether admirable. As an example I may quote the following incident: A few cases of enteric occurred among the privates of an artillery detachment. Every possible precaution was at once adopted. A vigorous investigation was at once begun to find the source of the infection. All sorts of things were sent to me for examination. At length I discovered the enteric microbe in water taken from the tap of an iron cistern in the Battery Aërated Water Factory. Observations made at the time tended to show that the water coming from the piped supply that was daily poured into the cistern was free from enteric. Apparently a temporary infection of the water in the cistern had occurred. But why had it persisted? The help of the medical officer in charge of the battery was invoked. On failing to find any obvious reason for the persistence of the infection by questioning the attendants in the factory, he had the cistern emptied. At the bottom and attached to the exit pipe he found a small filter. It was one made by a well-known firm of aërated water machine manufacturers, the use of which is now strictly forbidden, and the existence of which had been overlooked when these filters had been abolished. It was found afterward that the public supply had been temporarily infected with the enteric microbe. The medical officer who investigated the matter is of opinion that the presence of this filter is a probable reason why the consumers of aërated waters from this factory suffered relatively more severely than did other bodies of troops in the station. This case appears to be an apt illustration of the capacity of ordinary filters to act as breeding places for microbes. If the ordinary mess president attempts to improve his kitchen, he is likely to do more harm than good. For instance, he will issue orders that the floor is to be washed every day, instead of once a week. Under existing conditions, cleaning kitchens in Upper India is a dangerous process. Cooking the sahib's dinner is regarded as a somewhat unclean occupation by most natives. Mohammedans do not like it because we eat bacon, and Hindus look askance at the business because we eat beef. For these reasons native cooks in general are of rather low caste and low standing; hence they are apt to stand on what little dignity they have, and consider it beneath them to clean the floors of the kitchens in which they work; consequently the sweeper has to be called in to do the business. In Upper India there are no sewers. The sweeper is a man who fulfils the functions of a sewer; he is apt to carry about outside him what sewers in other countries carry about inside them—namely, dangerous microbes. I have elsewhere published an account of a very clear case in which I proved that the sweeper was introducing cholera microbes into the cookhouse because of his methodical habit of reserving one broom for clean work, such as sweeping out barracks, and another broom for dirty work, such as cleaning out latrines and cookhouses. Those who know India will agree with me that stopping this abominable custom may not be so easy as it appears on the surface. It is possible that the mess president would most readily achieve this object by insisting that the cook should sleep on the kitchen floor, if possible with his head in a *degchie*. The mess president would then have an assurance that he at present lacks that neither the one or the other would be cleaned with the broom that is used for the servants' latrines.

Both in the present paper and elsewhere I have given exam-

ples of the dangers attending the washing of dishcloths in India. I doubt whether in the whole of India there is a mess president or club secretary who has a reasonable certainty that his kitchen dishcloths are not washed in water infected with either cholera or enteric microbes. Unless the mess president can arrange for the sterilization of washed dishcloths, it might be wiser to leave them dirty.

ASSOCIATION NEWS.

Dinner of the Section on Ophthalmology.—The annual dinner of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION will take place at 7 o'clock on the evening of June 1, 1897, in the Hotel Walton. Gentlemen desiring to be present at this dinner will confer a great favor by sending their names at once to Dr. G. E. de Schweinitz, 1401 Locust Street, Philadelphia, Chairman of the Section on Ophthalmology. The subscription will be $3.

The Journal Train.—In order that physicians residing in and west of the Mississippi Valley who desire to go on the JOURNAL Train from Chicago may do so, we have perfected arrangements with the Pennsylvania Line for a solid vestibuled train to be run under the auspices of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and to be known as "The JOURNAL Train." It will consist of Pullman sleeping, dining, observation and baggage cars and be run from Chicago to Philadelphia without change. The success of our trip over the Pennsylvania lines, Chicago to Baltimore, in 1895, is assurance that no detail will be omitted that will contribute to the comfort and pleasure of our party en route and the reputation of the company is a guarantee of the perfection of arrangements and the manner in which details will be carried out. The train will leave Chicago about 11 A.M., May 30, and the schedule so arranged that the most interesting portion of the journey will be covered by daylight. After leaving Pittsburg the train will pass by the iron and coke industries of Western Pennsylvania, through historic Johnstown, where traces of the memorable flood are still noticeable, around the famous Horse Shoe Curve, across the Allegheny Mountains at a point where the scenery is magnificent. Excursionists will enjoy a fine view of the grand panorama as they are carried down the eastern slope of this romantic mountain range. The journey for miles will be along the blue Juniata. The Susquehanna River will be crossed just before the train rolls into Harrisburg, from which point the trip will be through the rich farming country of the eastern portion of Pennsylvania. About 12 o'clock, noon, we will be landed in the magnificent Broad Street Station of the Pennsylvania Railroad, located in the heart of the Quaker City. Applications for sleeping-car space may be made direct to H. R. Dering, Assistant General Passenger Agent, 248 South Clark Street, Chicago, Ill., or to any local agent on the Pennsylvania Line. Correspondence is invited.

NECROLOGY.

PETER DIRCK KEYSER, A. M., M.D., formerly professor of ophthalmology and dean of the faculty of the Medico-Chirurgical College of Philadelphia, died of pneumonia, on the 9th inst., at his home, 1832 Arch street, Philadelphia. Dr. Keyser was born in Philadelphia, Feb. 8, 1835, of German Lutheran parentage. In 1852 he was graduated from Delaware College with the degree in arts. He then especially devoted himself to chemistry, working in the laboratory of Dr. F. A. Genth, city chemist of Philadelphia, for two years. He continued his studies in Germany and returned to this country in 1858. In 1861 he entered the army as captain of 91st Regt. Penn. Infantry, U. S. V., and served in the Army of the Potomac in the Chickahominy campaign. Owing to wounds and ill health, he found himself obliged to retire from active service and he resigned his commission August, 1862. He again visited Europe and in 1864 received the degree of M.D. from the University of Jena, and subsequently attended the clinical instruction in the Hospitals of Berlin, Paris and London. On his return to the United States he was appointed acting assistant surgeon to the U. S. Army Hospital at Germantown, Pa. He entered upon private practice in 1865, when he finally retired from military service. He founded the Philadelphia Eye and Ear Infirmary in 1864 and delivered a series of clinical lectures to physicians upon accommodation and refraction, in 1868, and two years later began a regular series of lectures upon clinical ophthalmology. He was one of the surgeons of the Will's Eye Hospital for a period of more than twenty years. He occupied the chair of ophthalmology in the Medico-Chirurgical College for ten years, resigning on May 7, 1893; during a great part of this period he had been the dean of the faculty. In 1889, Dr. Keyser was appointed a member of the Philadelphia Board of Health, and rendered such efficient service that he continued to hold the position up to the time of his death. The Board of Health on learning of his death, adjourned for the day and passed appropriate resolutions. The Trustees and Faculty and the Alumni Association of the Medico-Chirurgical College held special meetings and also adopted resolutions of regret and condolence. Dr. Keyser was a companion of the Loyal Legion of the United States and was one of the founders of this successful patriotic and military organization. He was a member of the AMERICAN MEDICAL ASSOCIATION, the Academy of Medicine, Philadelphia County Medical Society, and also honorary member of the Delaware State Medical Society. He was vice-president of the Ophthalmological Section of the Ninth International Congress in 1887 and also of the Tenth Congress in 1890. Dr. Keyser contributed a number of articles to current medical literature, relating to diseases of the eye and refraction, and was the originator of a clinical ophthalmoscope which bears his name. His wife and daughter survive him.

C. LOISEAU, M.D., Paris, aged 72. The life of this talented and public-spirited physician, hygienist and alienist is a noble example for the rising generation, and the general sorrow at his death is a testimony to the value of his services. Neglecting selfish ends, he devoted his talents to the welfare of the community and served as member of the city council on numerous important sanitary and hygienic committees. He was also connected with many scientific societies, and as president of the Medico-Psychologic Society accomplished much for the insane. His lectures on public, private and professional hygiene were significant factors in the progress of the last decades.

A. H. HUGHES, M.D., died at Auburn, Wash., March 2, 1897, age 78 years. Dr. Hughes was born in Warren County, Mo., and graduated from the Missouri Medical College of St. Louis in 1850. After practicing several years in Missouri, he removed to Dallas, Ore., in 1864, and after four years practice in that place moved to Kent, Wash., where he has since resided. He continued in the active practice of his profession in the White River Valley until 1889, when he retired on account of ill health.

EDWARD PAYSON ABBÉ, M.D., Harvard, 1852, died in New Bedford, Mass., February 24. He was a graduate of Yale College in 1848 and was a member of the Massachusetts Medical Society since 1853, and at the time of his death was consulting physician to St. Joseph's Hospital.

JOSEPH LOUIS DROESCH, M.D., of Brooklyn, died from pulmonary tuberculosis on February 19. He was a native of Brooklyn, the son of German parents, and was approaching his forty-first birthday. He was an alumnus of the College of Physicians and Surgeons, New York, in 1883.

HENRY M. BLACK, M.D., Jefferson Medical College, 1875, died at Strasburg, Pa., February 28, aged 45 years.

JOSEPH F. GALLAGHER, M.D., Jefferson Medical College, 1891, died at Freeland, Pa., March 3.

BOOK NOTICES.

Manuale Pratica della Medicatura Antisettica. Del Dr. ADELCHI ZAMBLER, con Prefazione del Prof. E. TRECOMI; con 6 incisioni. Ulrico Hoepli, Milano. 1896. (Practical Manual of Antisepsis.)

L'Impiega Ipodermica e la Dosatura dei Remedi. Manuale Terapeutica del Dottore GAETONE MALACRIDA. Milano. 1895. (The Hypodermic Employment and the Dosage of Drugs.)

These two little books belong to the series of pocket-sized Italian hand-books published by Hoepli, a series which for extent and range of subjects has apparently hardly anything comparing with it in our own language. It includes at least some five hundred different publications, their subjects ranging over the fields of science, art, history, religion, etc., in cheap and convenient form. The medical publications include some fifteen or sixteen titles, which, judging from these present volumes, are meritorious handy compendiums of the fullest and latest knowledge of their subjects. The antiseptic manual gives the general principles of medical and surgical antisepsis, with a pretty full historic statement; and the other little volume, beside a general dose list of drugs, is a manual of hypodermic medication and includes a long list of formulas for hypodermic injections. Both appear to be scientific and accurate, and while many of the special methods of antiseptic detail which are being constantly added to, are necessarily omitted, they both seem fairly up to date.

Semeiotica. Breve compendio dei metodi fisici di esame degli infermi, del Professore U. GABBI, di pag. xvi-216, con 11 figure intercalate nel testo. Manuale Hoepli, elegantemente legato L. 2.50. (Semeiotics, a brief compendium of the methods of examination of the sick.)

This is another of the Hoepli handy volume series, and is devoted to the method of examination in disease, more especially to the physical and rational signs, the examination of urine, blood and other liquids of the body, both chemic and microscopic, etc. It does not go into the description of bacteriologic methods of examination; these are apparently left for a future publication. For a book, its compass covering so wide a range of subjects, it seems to be fairly complete, but like numerous similar publications in this country, it is not exhaustive. For a suggester and quick reference book it seems well fitted. As will be seen by the title it is not pretentious in its claims.

MISCELLANY.

Montana State Board of Medical Examiners.—Dr. C. O. Evans, of Deerlodge, Mont., has been appointed a member of the State Board of Medical Examiners, to succeed Dr. Bullard.

The "Archiv fuer Schiffs und Tropen Hygiene," the new magazine devoted to consideration of the questions affecting maritime and tropical interests and hygiene, mentions the probability that Yersin will be commissioned by the Chinese Government to found a Pasteur institute at Canton.

The Subject of Dr. Unna's Prize Competition for 1897, "is investigation of the ability of the known stains of elastin to stain elacin also, and if so, to what extent." The prize is 300 marks. Contributions are to be sent to Leopold Voss of Hamburg, Hohe Bleichen 34. There are no restrictions to the competition.

Vaccination in the Schools of Paris.—Acting upon the suggestion of the Académie de Méd., the Paris authorities are to bestow prizes upon the teachers, male or female, public or private, who compile the most complete statistics in regard to vaccinal operations and do the most to promote vaccination and revaccination in the schools.

Aberdeen University Honors an American.—Alexander J. C. Skene, M.D., of Brooklyn, N. Y., received on February 27 information that the degree of LL.D. was conferred upon him by the University of Aberdeen, Scotland. He is to be congratulated, for the university is exceedingly chary of its honors, and he is the first to have received the compliment on this side of the Atlantic. In 1590 an ancestor, Sir George Skene, was physician to the king and a professor of medicine in King's College, Aberdeen.

Insanity of English People.—Prof. J. Holt Schooling, Fellow of the Royal Statistical Society, has ended his investigation and concludes that one in every 360 of the population of Great Britain has some form of insanity. He gives facts to show that in every 10,000 of the English and Welsh population, 31.4 people are lunatics. In every 10,000 of the Scotch population, 33.6 people are lunatics. In every 10,000 of the Irish population 40.3 people are lunatics. As among the chief causes, with the percentage of each in classes of a hundred he gives the following: Drink, 33.6; domestic troubles, 15.1; mental anxiety, 13.4; old age, 13.2; adverse circumstances, 13; accidents, 6.5; religious excitement, 4; love affairs, 3.2.

Anecdote Regarding Lord Lister.—While going round his wards in the Glasgow Royal Infirmary one day, Sir Joseph, then plain Mr. Lister, came to the bedside of a patient whose arm had been severely crushed without the skin having received any injury. Turning to the assembled students, he said: "Gentlemen, I have frequently noticed that when severe injuries are received without the skin being broken, the cases nearly always recover. On the other hand, trouble is always apt to follow, even in trivial injuries, when a wound in the skin is present. How is this? I can not help thinking that the man who is able to explain this problem will be one who will gain for himself undying fame." Lord Lister himself has proved the truth of his prophecy.—*London Daily News.*

Amputated Foot Should not Have Been Exhibited.—On the trial of the personal injury case of Rost v. Brooklyn Heights R. Co., the physician who had amputated the left foot of the plaintiff, a little girl who had been run over by a trolley car, was asked to produce the foot, which he had preserved in a glass jar. The amputation was admitted, and no claim was made that it was not properly done. But, two reasons were advanced for exhibiting the foot: "To show the size of the child at the time;" and because the discoloration upon the foot had a tendency to establish that the electric current had not been shut off at the time the child was run over, and therefore bore directly upon the negligence of the railroad company in the operation of the car. It may be assumed, says the appellate division of the supreme court of New York, Dec. 1, 1896, that technically the rule of evidence authorized the exhibition of the foot. But such rule, it holds, is without force when the legitimate purpose for which the exhibit may be made is slight, and the strong tendency is to work improper and illegitimate results. In this instance it was perfectly clear that the direct tendency of the exhibition of this mangled foot, coupled with other considerations, was to arouse the prejudice and inflame the passions of the jury into an angry resentment against the author of the misfortune. This condition, the court holds far overbalanced any legitimate purpose for which the exhibit might have been made, and rendered the exhibition of this foot, under the circumstances of the case, improper.

A Strange Case of Postmortem Mutilation was recently reported at a meeting of the k. k. Medical Association of Vienna. The victim was a woman of 37, a newspaper carrier, who was found in her locked room extended on the floor with the lower part of her body exposed, evidently by her own hand. She had probably been dead a couple of days. The external genitals were much mutilated with an extensive and irregular wound, which the absence of all inflammatory reaction showed to be postmortem. The cause of death was found to be the closing of the coronary ostium with fresh fibrin masses due to endaortitis. The mutilations had been made by a little dog in the room,

which the woman kept and had evidently used for perverted sexual purposes, although it was known that she had sexual relations otherwise. Cases of mutilation by fishes, insects and rats are not uncommon, but this case is unique, and if the circumstances had been less clear, it might have presented a puzzling criminal aspect.—*Wien. klin. Rundschau*, February 14.

Dr. Koch and Others will Visit Bombay.—The German Commission for the study of the plague left Germany for India last week. The members are Professor Koch, Professor Pfeiffer of the Institution for Infectious Diseases, Professor Gaffky of Giessen, Dr. Disuderic and Dr. Sticker of the Imperial Health Office. Professor Koch will travel direct to Bombay on the completion of his investigations in South Africa, and till his arrival the leader of the commission will be Professor Gaffky, who was with Professor Koch in British India during the great cholera epidemic of 1884, and assisted him in the researches which finally lead to the discovery of the comma bacillus.

A Necrotomy not an Autopsy.—Mr. A. of the coroner's office, was in a sad quandary. In one hand he held a medical dictionary; the other, which he allowed to hang listlessly by his side, grasped a pen. Before him, upon his desk lay a large sheet of paper, upon which he had been writing. "Well," he remarked, after a period of thoughtfulness, "I give it up. There's something in a name after all. I have been trying for the last hour to fill out a requisition blank. Now here's the word autopsy. Some of our smart doctors have been finding fault with the way the word has been used in this office." "Why," said I, "the word autopsy means the cutting." "There's where you're wrong," he interrupted; "it means no such thing. Listen to this: 'Autopsy: Examinining or seeing one's self, self-inspection. The word is strangely misapplied to the postmortem study of the body of another.' Look at yourself in a glass and according to this definition you perform an autopsy. That ought really to be a word for the exclusive use of women. Now," he continued, "there is the word necropsy, 'the examination of a dead body.' But that hardly fills the bill. It may be a merely superficial examination. Here though, is the word necrotomy, 'the dissection of a dead body.' This appears to hit nearer the mark, but how awkward this would sound: 'Coroner B. performed a necrotomy yesterday in the case of, etc.,' but, I believe that I will stick to the first principles. Every one knows what is popularly meant by the word autopsy, and some of our most eminent physicians have used the term in the sense in which I have always understood it."

New Researches Concerning Beriberi.—Beriberi is in the Dutch Indies one of the most pernicious diseases, and at the same time yet miraculous. It does not lead to death immediately, but ends in a general or particular paralysis of limbs, hands and legs. There was no cure of it, however, till now. The disease had been noticed first at Abjeh, some twenty years ago, as of epidemic standing. It was thought it befell only the natives, but among the many hundred men sick of beriberi and brought to Batavia, there were found many European soldiers. The infectious matter was then derived from the soil, which had been thrown up and ploughed through by military works. About 1885, when the plague seemed to dissolve and lessen the army, Professor Pekelharing from Utrecht, a renowned bacteriologist, was sent to Abjeh to study the disease even in its place of birth, to find out its bacilli, and, if possible, also a cure against it. In these directions Professor Pekelharing failed entirely. He returned without any result and the disease went on. Now Dr. Eykmann, physician in the Dutch military service, seems to have been happier than his colleague and countryman. Dr. Eykmann conceived the idea that beriberi had nothing to do with the soil, but with the food given the soldiers. The natives there live on rice as their exclusive food and the Europeans also in these regions take to it. Now Dr. Eykmann had marked that those soldiers were taken from beriberi who got the Saigun rice, but those fed on the native "red" Sumatra rice remained healthy. In the prison at Sourabaya he found likewise, that while on July 1, 1896, ninety-nine prisoners out of 800 had been caught by beriberi, this cipher fell to 86, 82, 43, 21 and 13 during the next month on account of giving the Sumatra rice instead of the Saigun rice. Sure, Dr. Eykmann's theory has not yet any scientific foundation, but a mark is found and a practical sign, which, no doubt, will lead us sooner or later to the discovery of the growth and evolution of infectious material in the human body.

Cathode Photography vs. the Corset.—If anything will convince the fair sex of the evils of the corset, it will be Roentgen Ray photographs taken through the corset, in which they can see for themselves how their viscera are displaced and compressed by it. Madame Gaches-Sarraute, a Paris physician, recently exhibited some photographs of the kind at the Acad. de Méd. with others showing the beneficial effect of wearing a hygienic corset she has invented, for which she was awarded a prize by the Faculté de Méd. at the close of the year. The Prussian Government has appropriated 50,000 marks to further the study of cathode photography.

Jury Decides Injury Caused Septicemia.—The supreme court of Minnesota says, in the personal injury case of Miller v. St. Paul City Ry. Co., decided Nov. 9, 1896, that the evidence as to whether the disease septicemia, with which the plaintiff was afflicted, was caused by her injury on the car of the defendant, was not simply speculative. There was evidence in the case tending to show that it is a germ disease, and that an external blow on the body would not be the cause of introducing the germs into the body, but that the germs might exist dormant in the system, and be set in motion or "lighted up" by an external blow or injury, and hence that the plaintiff's injury was the direct inducing cause of the disease. The value and weight of the evidence, the court holds, was for the jury, and that it was correctly submitted to them. The jury took the plaintiff's view of it, and awarded damages accordingly.

Embryology Researches.—The University of Chicago has issued the following circular:

In the entire domain of morphology there is perhaps no province in which the investigator is so directly dependent upon the physician as in that of human embryology. Since 1837, when Karl Ernst v. Baer's "Epistola de Ovi Mammalium et Hominis genesi" marked the dawn of this branch of morphology, repeated appeals for assistance have been made. The generous responses have made possible such works as those of Coste, 1847; His, 1880; Minot, 1892; Marshall, 1893; Mall, 1893; and have linked inseparably with the progress of morphology the names of many physicians, nbtably Drs. Greppin, Ecklin, and Munch of Basle; Drs. Lomer and Leopold of Leipzig; Dr. Glaevecke of Kiel; Dr. Kittredge of Nassua, N. H., and Dr. Garrigues of New York.

Although we have acquired a vast amount of information there still remain fields almost unexplored. It is well known that we possess no information concerning the fertilized ovum, or its cleavage, and but little concerning gastrulation; the systemic growth changes have been very inadequately studied; while more facts concerning organogeny are highly desirable.

In order to obtain material for these and other lines of research, the Departments of Neurology and Anatomy of the University of Chicago ask your coöperation.

Should the request meet with your approval, we shall be pleased to forward you receptacles, reagents, etc., for the preservation of material to be sent us. Yours respectfully,

H. H. DONALDSON, Head Professor of Neurology; and A. C. EYCLESHYMER, Associate in Anatomy.

Bills Cut Down.—Uncontradicted testimony that a married woman told her physician that she wanted him to come whenever sent for, and she would see that he was well paid, the surrogate of Cattaraugus County, N. Y., holds, September, 1896, *in re* Smith's Estate, was sufficient to bind her separate estate therefor. At the same time the surrogate cuts down a bill of $412 for four visits a day for 103 days, thinking $350 a

liberal allowance. The reason given is that the physician resided very near his patient, called in to see her when he desired, and then made a uniform or average charge of four visits a day at a dollar each, while it was also taken into account that the patient was afflicted with an incurable disease, the physician gave her but little medicine, and often called in two other doctors for counsel and advice, from a place fifteen miles distant. The woman's condition and the character of her disease, the surrogate further holds had an important bearing upon the question of the necessity of these repeated consultations and the value of the services, and because each of the consultants was in attendance upon an invalid sister of the woman's, residing with her, against whom they made the same charges, he holds that their bills should each be cut down from $15 to $10 a visit. In this connection, it may also be noted that the probate judge of Cook County, Illinois, holds that $2,000 was too much to charge for eight days' medical attendance on Mrs. Ada B. Gellatly, of Evanston, Ill., although it included a trip from California to Fortress Monroe and return to Evanston with Mrs. Gellatly in a private car. He thinks $100 a day an ample fee.

The Hindu Lying-in Chamber.—According to the *Indian Medical Record*, the mortality in childbed among Hindu women is notoriously high, a circumstance which is no doubt largely due to the very early age at which they usually become mothers. A still more potent cause is, however, to be found in the shocking and apparently deliberate barbarity with which they are treated during the puerperium. The lying-in chamber of a Hindu family is ordinarily a little, damp, ill ventilated hut or room in some remote corner of the court yard or compound. In this the expectant mother is placed and there she remains from eleven to thirty-one days, during which, according to Brahminical law, she is looked upon as unclean. There is only one small inlet in this apartment, and the door is carefully closed to exclude those evil spirits, light and air. In order, probably, to purify the unfortunate woman by heat, wood fires are kept burning in the room both night and day. The smoke has to find its way to the outer air as best it can through any chinks there may happen to be in the roof or walls, which are usually made of bamboo with a thatching of mats or straw. With the view of more effectually exorcising the unclean spirit, a powder composed of peppercorns or ginger is given to the patient during the first few days; this preparation is administered either in the form of a paste or dissolved in boiling water as a tisane. It is not surprising to learn that the result of this elaborately perverse therapeusis is that something like 40 per cent. of the women subjected to it die of puerperal fever and tetanus within the first fortnight after delivery.

The Carrier Pigeon in Medical Practice.—Mr. James Payne, an English litterateur, quotes from the letter of a friend on the above subject, as follows: "I began using pigeons (Antwerps) for messenger purposes as early as 1874. The idea of their finding their way by 'instinct,' as is popularly supposed, is all nonsense. They go by sight, and on a misty day or if started too late in the afternoon, they either lose their way or refused to go. The birds were kept at the village where the doctor lived and where all messages had to be sent, and they were sent in turn in hampers up to me at my lodge, where they were kept in a large cage till they were wanted to go a message. At the arriving place their only way of entering was through a door of wire, which they could push open, and which rang a bell to let the man in charge know that a message had arrived. Inside this door, when a message was expected, the man hung a small cage, so the pigeon instead of finding himself in his roomy home, got into what corresponds to the letter-box inside an ordinary front door and actually delivered himself both as letter and postman. I found that the message was best wrapped up like the mottoes in Christmas crackers and tied under and to the middle tail feather; if tied to the leg they hampered him as he could not double his leg well while flying, and was apt to pick them off. Under the wing in an envelope—though that is the way they are represented by artists—they would prevent the pigeon flying at all."

Unpaid Doctor's Bills an Expense.—In an action to recover damages for a physical injury, sustained by reason of a defective sidewalk, the court of appeals of Kansas holds, in the case of City of Abilene v. Wright, Oct. 17, 1896, that the reasonable cost and expense of medical attendance necessarily incurred may be recovered for, even though actual payment therefor was not made prior to the commencement of the action.

Measure of Damages for Malpratice in Setting Arm.—In an action against a surgeon for malpractice in setting and treating a broken arm, the supreme court of Nebraska holds, in the case of Miller v. Frey, decided Oct. 21, 1896, that the measure of damages is the damage accruing to the plaintiff in excess of that which would have accrued naturally from the breaking of his arm had he been treated with that degree of skill ordinarily possessed by surgeons. It is not the damage resulting from the breaking of the arm. That some damages would have resulted from that injury in spite of the most skilful treatment is pronounced clearly unquestionable. The defendant, no matter how unskilful he may have been, could not be liable for all the injuries resulting from the breaking of the arm. He is only liable for those resulting from malpractice; that is, for the damages resulting from his failure to exercise that degree of care and skill ordinarily exercised and possessed by physicians and surgeons in the treatment of such cases.

Hematopoietic Function of the Blood Marrow.—Roietsky has been studying this subject and announces that he finds the number of white corpuscles much larger in the blood as it leaves the bones than when it enters. The marrow therefore generates leucocytes, and does not cause their disintegration as some have supposed. The number of degenerated leucocytes is the same in the arteries as in the veins. The activity of the marrow seems to increase as other hematopoietic organs are destroyed, as for instance in the case of dogs whose spleen has been removed, the number of leucocytes originating in the marrow is much augmented. In experimental leucocythemia produced by giving turpentine to dogs, the function did not seem to be modified, but in some cases of natural leucocythemia, the number of leucocytes produced by the marrow was much increased. —*Bulletin Méd.* January 3 from Wratsch.

Coincidence or Cure.—Several pages are devoted in the *Bulletin Méd.* of January 17 to the description of a case that presented the clinical picture of the hectic fever that accompanies acute consumption. There was first acute febrile broncho-pneumonia, passing into a chronic state, with indications of a granulous infiltration of the right lung, etc. Exploratory punctures gave negative results. There was scarcely any expectoration, but Koch's bacilli were found in the sputum. The fever continued very high with two daily exacerbations, 39.5, 40.5 to 40.9 degrees C. This condition continued for two months, with the patient in a drowsy, exhausted state, gradually growing weaker. As a last resort the father begged to have the Roentgen rays applied to his son's chest. The first day after this was done the fever was higher than ever, but after the second application the fever stopped abruptly and the patient began to recover. In seventeen days he was completely restored and was removed to the country. Rendu and Castel, who report the case, do not, of course, venture to draw any conclusions whether the recovery was spontaneous and the cure merely a coincidence, or whether the rays were the cause of a cure. The patient certainly had youth and a fine physique in his favor. The rays produced a violent erythema, developing blisters and dermic ulcers, which lasted for three weeks and may have contributed to the cure.

Insurance of Unregistered Pharmacist.—Notwithstanding the Iowa statutes prohibit persons not registered pharmacists from conducting any pharmacy, drug store, or any store for the purpose of selling, compounding, or dispensing medicines or poisons for medicinal use, the supreme court of that State decided, in the case of Erb v. German-American Insurance Co., May 27, 1896, that an insurance policy on the stock of merchandise kept for sale by an unregistered pharmacist was not void, as against public policy. Oct. 20, 1896, it held, in Erb v. German Insurance Co., that a policy which contained the specific provision that "If the premises insured shall be used or occupied in whole or in part for an unlawful purpose this policy shall cease and be determined," was not rendered void by the mere fact that one not a registered pharmacist occupied the building as a drug store, it not being affirmatively shown that he conducted it contrary to law, for he might have employed a qualified pharmacist to conduct his business. Both of these decisions are cited and followed in principle, Dec. 9, 1896, by the court, in Erb v. Fidelity Insurance Co., where it holds that a policy on the store furniture and fixtures of an unregistered pharmacist is not void, as against public policy, particularly when it was not shown that his object in procuring the insurance was to protect and aid an illegal business.

A Proposed Optometry Board of Examiners for New York.—Whether the people of the State of New York are well regulated or not, may be a question; but that they are much regulated there can be no doubt. Under the laws of the State not only the practice of medicine is regulated, but also the practice of dentistry, pharmacy, veterinary surgery, chiropody, plumbing and horse-shoeing, and a bill is now before the legislature to regulate the practice of optometry, and we are informed that the barbers are to introduce a bill to regulate the practice of the "tonsorial profession." The bill to regulate optometry was defeated in the last legislature, lacking, however, only seven votes in the assembly. A new bill has just been introduced which provides that the Regents shall appoint a State Board of Examiners in Optometry, which shall examine all persons engaged in optometry in the State, and shall confine its examinations to such knowledge as is essential to the practice of optometry. The proposed act is to be construed so as not to apply to persons who sell spectacles or eyeglasses, without making pretensions to scientific knowledge or skill in adapting them to the eye. Registered physicians are exempt from the provisions of the act. The Optical Society of the State of New York, under whose auspices we understand the bill has been prepared, state that the principal object of this bill is to protect the public against incompetent and designing persons who may in the future "attempt to traffic upon postulate skill in adapting glasses to the sight." In a circular entitled "The Optician and the Oculist," published by the Society, the argument of the oculist that the testing of eyes for glasses should be done by him and not by the optician, is met by the following argument, which is, to say the least, ingenious, that "as the optician refracts, or bends, rays of light with his lenses before they enter the eye, and not afterward, he is treating light, not treating disease."—*Brooklyn Medical Journal*, February.

The State Medical Examiner of Rhode Island.—This little State is one of the few that have risen to the requirements of modern thought as to medico-criminal investigation, in the replacement of the antiquated coroner's office. There are twenty-five examiners, about one-half of whom have the care of Providence County. Dr. Swartz, in the last bulletin of the State Board of Health, explains some of the duties of the medical examiner, stating that for the time being—and at the same period of time—he must be a physician, a detective and a jurist. He must be an adept in medical lore and in legal requirements, attentive to every detail of surroundings and conditions, and he must judge promptly as to the issue, otherwise the ends of justice may be perverted and the functions intended for his office come to naught. "The importance of the office is being daily emphasized by the frequent occurrence of deaths from violence and under suspicious circumstances, calling for knowledge and information on the subject from the medical examiner for all and more than the experiences of his predecessors can furnish. To obtain physicians from the fraternity at large who may possess all these qualifications is a difficult matter, for the subject is made only a side branch of instruction in most of our medical schools. It is not desirable to place in so important a position one whose experience with the world has been limited to a few years of study and to but a few years of actual contact with the ways of the world. It is preferable to obtain the assistance of those who have had the experience of a ripened practice, and whose judgment and action will not lead the State into unnecessary expense, nor by hesitation allow the cause of any criminal act to be lost to view. To find such men who are willing to give their time and their services to this work—for it requires sacrifices innumerable—is a difficult matter. Our State has, however, been well favored in this respect in past years, and it is to be hoped that the increased attention which it is necessary to give to this line of work will stimulate those undergraduates who have a liking for this branch to so perfect themselves that the position will seek the applicant, and not be necessary for the applicant to seek the position."

The Card Index in the Surgeon's Office.—Dr. A. T. Bristow of Brooklyn, in the *New York Medical Journal*, recognizes the growing position of periodical literature in the art of the surgeon, and the imperious need of saving time while keeping abreast of the march of that literature. He says "the greatest opportunity which our modern science and civilization offer to the medical worker of today is the abundance of literature which the printing press places at his disposal. There are the journals on special subjects and those which embrace the general field of the healing art. I need not specify the names of such periodicals to this audience. Indiscriminate and omnivorous reading is better than idleness, but the reader who does not classify his literature does not, it seems to me, utilize his material to the best advantage. A heterogenous mass of information gathered from all sources is likely, in an emergency, to leave its owner in the position of one who always thinks of a bright retort after the opportunity to use it has gone by. But a lost opportunity in our art often means the sacrifice of a life. Knowledge, especially that which we gain from current literature, needs to be classified in order to be of full value. Accurate information in any branch is always classified information. I have found the following plan to be of great use in my own case of keeping my facts where they are readily attainable. As soon as possible after the receipt of a journal, as I read over the different articles, I check them off and enter each subject in a card-catalogue index. I devote my indexes exclusively to the subject in which I am engaged, surgery. Thus, on the subject of hernia, all the articles on hernia appearing in the various journals are entered by title, author's name, journal, page and volume. I find, on referring to my index, that I have fourteen such references on hernia; on the surgery of the gall bladder, thirteen references; on the surgery of the intestines, twelve references; on the surgery of the ureters, nine. Yet it is but two years since I commenced this system. Who can doubt but that in the thirteen references to the surgery of the gall bladder there is contained a mass of information concerning both diagnosis and technique which is unsurpassed, not a tenth part of which could be found in any three modern surgical text-books? Yet it is all at my disposal in the time that it takes to look over the card and get down the journals. The surgery of the ureters has been developed in the past few years, and, except in the most recent text-books

there is absolutely nothing to be found on this point. In the nine references on my card the subject is exhaustively treated, and I have almost a volume at my disposal, an amount of material at least for which no writer on surgery, no editor of an encyclopedia could find room in a single work. There is also in the labor of indexing the literature a sort of fixative which impresses the subject on the memory. The best system of mnemonics is that which involves an orderly classification of facts, and this cataloguing of current literature is that and nothing more. The method has been of great benefit to the writer, and I hope that I may be permitted to mention it, not as anything original or new, but as worth adopting, and to be commended as a means of rendering most useful one of the greatest opportunities of modern medicine, its rich literature."

Admissibility of Testimony as to Probabilities.—There is a clear distinction to be observed, according to the supreme court of Wisconsin, between the competency of testimony to be received with regard to the permanency of personal injuries, and its sufficiency, when received, to establish the ultimate fact to which the proofs are directed. On such questions as are not subject of absolute proof, the testimony should exhibit the nature and strength of the probability. It is then for the jury to determine whether it amounts to proof of the ultimate fact, to a reasonable certainty. Testimony which tends, in some appreciable degree, to establish the ultimate fact, is competent to be received, even if, in the end, it should be found insufficient to fully establish it. For these reasons, the court holds, in Nichols v. Brabazon, Dec. 15, 1896, that it was competent to ask a physician to state what the probabilities were for the recovery of the plaintiff from personal injuries. It also holds that damages can be recovered for bodily pain and mental suffering in the future, where it is established, to a reasonable certainty, that such damages will be endured in the future. And it holds that expert evidence to show that a failure of a person to properly exercise her limbs might have been the cause of the permanency of her injuries was inadmissible so long as there was no evidence to show that there was a want of proper exercise, and some affirmative evidence went to show that there was such exercise.

Apyretic Intraperitoneal Rupture of Hydatic Cyst in the Liver.—The case described in the *Province Méd.* of December 19, presented the usual symptoms, sudden pains radiating into the abdomen, syncope, increase in volume of the abdomen, urticaria, vomiting and slight pleurisy of the right base, but no fever at any time. Professor Jaboulay performed a supra-umbilical laparotomy, which gave issue to a large quantity of fluid apparently slightly tinged with bile. The operation was followed by Mikulicz's marsupialisation, with strips of iodoform gauze reaching to the cyst in the liver. The discharge of intraperitoneal fluid continued for two months, while the general health and appetite were good. A month and a half after the laparotomy, the cyst was punctured and quantities of bile escaped with the hydatic liquid and also fragments of the hydatic membranes. Pieces of the membrane came away for three weeks and were removed with the forceps, when the the wound was dressed every day. As the discharge decreased the opening healed until only a small fistula remains after three months. The presence of bile in the liquid after both operations, shows that there must have been some communication with the biliary passages and the bile as it entered the cyst must have killed the parasite. The case also illustrates anew the extreme tolerance of the peritoneum for the hydatic liquid and the bile when they are both aseptic.

Philadelphia.

THE BOARD OF TRUSTEES of the Jefferson Medical College has appointed a Committee on Arrangement for the purpose of having the institution fittingly represented at the unveiling of the monument to the memory of Prof. Samuel D. Gross, the ceremony having been appointed for May 5, 1897, at 5 o'clock P.M., at Washington, D. C.

AT THE MEETING of the Section on Ophthalmology, of the College of Physicians, March 16, Dr. Wm. M. Sweet, by invitation, read "A Preliminary Report on the Localization of Foreign Bodies in the Eye by the Roentgen Rays." Dr. Howard F. Hansell, at the preceding meeting of the Section had reported a case of a man who had carried a piece of steel in his eye for nearly a year, in which a skiagraph being made by Dr. Stern at the Polyclinic Hospital, showed the presence and locality of the foreign body. The eye had become atrophied and vision was lost. Dr. Hansell enucleated the eye and found the fragment of iron in the ciliary body. A case was also reported by Dr. DeSchweinitz, in which the steel was successfully extracted.

THE PHILADELPHIA POLYCLINIC is organizing an intelligence bureau for physicians visiting the city, from which information may be obtained of operations, interesting cases, etc., to be presented at the various clinics held at different hospitals, not only by members of its own staff but also by any other member of the regular profession who wishes to avail himself of the opportunity offered of inviting physicians to witness his operations. In this way it is hoped that much more can be made of the clinical facilities offered by Philadelphia than by any other method. The Polyclinic is particularly favorably situated for getting into communication with physicians coming to the city and offers to furnish the clerical work, telephone connections, etc., without expense. It is expected that this will prove a great convenience during the coming meeting of the ASSOCIATION.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 6 to 12, 1897.

Capt. Charles Willcox, Asst. Surgeon (U. S. Military Academy, West Point, N. Y.), leave of absence granted is further extended one month and fifteen days, with permission to go beyond sea.

Change of Address.

Carmichael, D. A., U. S. M. H. S., from Vineyard Haven, Mass., to Cleveland, Ohio.
Collins, Katharine R., North College Av. and 22d St., Philadelphia, Pa.
Hall, J. N., from 1517 Stout St. to Jackson Bldg., Denver, Colo.
Hillkowitz, Wm., from 507 W. 7th St. to 704 Race St., Cincinnati, Ohio.
Lousman, F. A., from 270 E. Huron St. to 100 State St., Chicago, Ill.
McBride, M. A., from New Orleans, La., to Tahlequah, Ind. Ter.
Shepstone, J. A., from 3819 to 4844 State St., Chicago, Ill.
Vaughan, G. T., U. S. M. H. S., from Philadelphia, Pa., to No. 3 B St., S. E., Washington, D. C.

LETTERS RECEIVED.

Asher, A., & Co., Berlin, Germany; Alma Sanitarium Co., Alma, Mich.; Atkinson, W. B., Philadelphia, Pa.; Ashmead, Albert S., New York, N. Y.; Association, Kansas City, Mo.; American Therapeutic Co., New York, N. Y.; Anderson, Meredeth, Georgetown, Ky.
Brown, Sanger, Chicago, Ill.; Blodgett, F. J., New York, N. Y.; Branch, B. L., Collierville, Tenn.
Cathcart, Cleland & Co., Indianapolis, Ind.; Carstens, J. H., Detroit, Mich.; Coldren, E. V., Topeka, Kan.; Cook, C. A., & Co., Chicago, Ill.; Carter, A. H., Council Bluffs, Iowa; Colburn, J. M., Richland Center, Wis.; Collins, T. R., Bath, England; Cordell, E. F., Baltimore, Md.
Dunlap, W. B., San Francisco, Cal.; de Schweinitz, G. E., Philadelphia, Pa.; Dudley, W. H., Easton, Pa.; Davis, N. S., Jr., Chicago, Ill.; Durham, O. R., Defiance, Ohio; Drake, E. L., Philadelphia, Pa.
Ellenberger, J. W., Harrisburg, Pa.
Fairchild, Bros. & Foster, New York, N. Y.; Furst, O. J., Peabody, Kan.; Frank, Louis F., Milwaukee, Wis.
Garceau, E., New York, N. Y.; Grady, B. J. L., Boston, Mass.
Hatton, E. M., Columbus, Ohio; Hummel, A. L., Advertising Agency, New York, N. Y.; Hays, Geo. A. B., Jackson, La.; Harsha, W. M., Chicago, Ill.; Hitz, Henry B., Milwaukee, Wis.
Johnson, E. F., Des Moines, Iowa; Johnson, H. L. E., Washington, D. C.; Jones, L. H., Wall Lake, Iowa; Judd, W. H., Janesville, Wis.
Koechl, Victor, & Co., New York, N. Y.; Kendall, W. A., St. Louis, Mo.; Kane, H. H., New York, N. Y.; Kress & Owen Company, New York, N. Y.; Klebs, Edwin, Chicago, Ill.
Lord & Thomas, Chicago, Ill.; Lehn & Fink, New York, N. Y.; Love A. H., Salem, Mo.; Leighton, N. W., Brooklyn, N. Y.
Mariette, C. E., Hayneville, Ala.; Moore, J. C., Omaha, Neb.; Mills, Harry B., Philadelphia, Pa.; Montgomery, E. E., Philadelphia, Pa.
Neal, John H., Rochester, N. H.; Norwich Pharmacal Co., Norwich, N. Y.; Noble, Thos. B., Indianapolis, Ind.
Packer, E. B., Osage, Kan.; Parke, Davis & Co., Detroit, Mich.; Parmele, C. R., New York, N. Y.
Richardson, E., Louisville, Ky.; Rice, F. E., St. Paul, Minn.; Reed & Carnrick, New York, N. Y.; Rach Cocoa Co., New York., N. Y.
Smith, A. F., Wampecong, Ind.; Sumney, H. C., Omaha, Neb.; Struch, Carl, Chicago, Ill.; Stoner, C. E., Des Moines, Ia.; Staples, Franklin, Winona, Minn.; Stowell, Chas. H., Washington, D. C.; Schering & Glatz, New York, N. Y.
Towler, S. S., Marienville, Pa.; Trevin, J. L., Detroit, Mich.
Vincent, John A., Springfield, Ill.
Wessels, Francis E., Ridley Park, Pa.; Williams, Alice D., Syracuse, Ohio; Wingate, U. O. B., (2) Milwaukee, Wis.; Woodbury, Frank, Philadelphia, Pa.; Walker, H. O., Detroit, Mich.; Wilbur, C. T., Kalamazoo, Mich.